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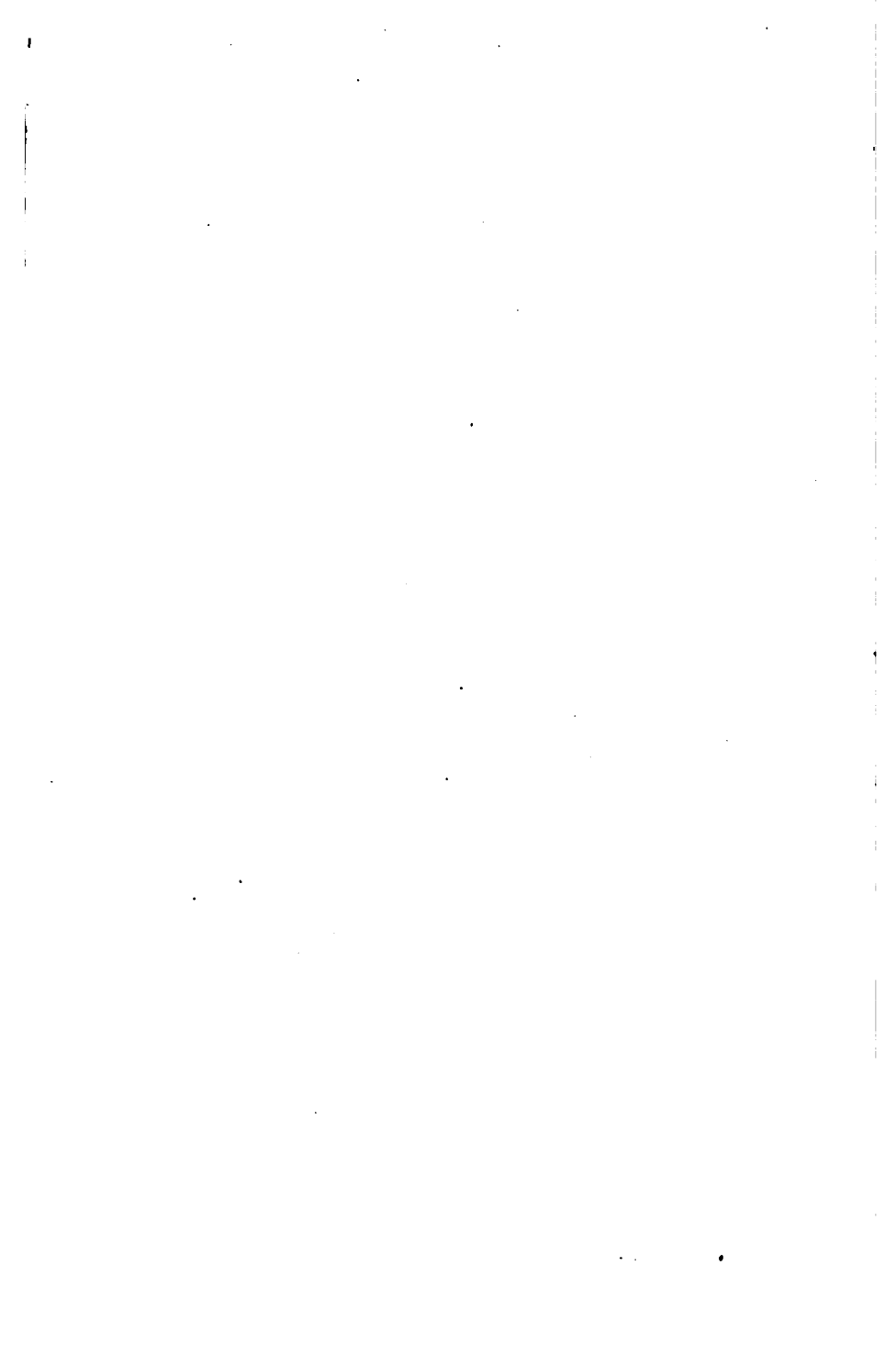


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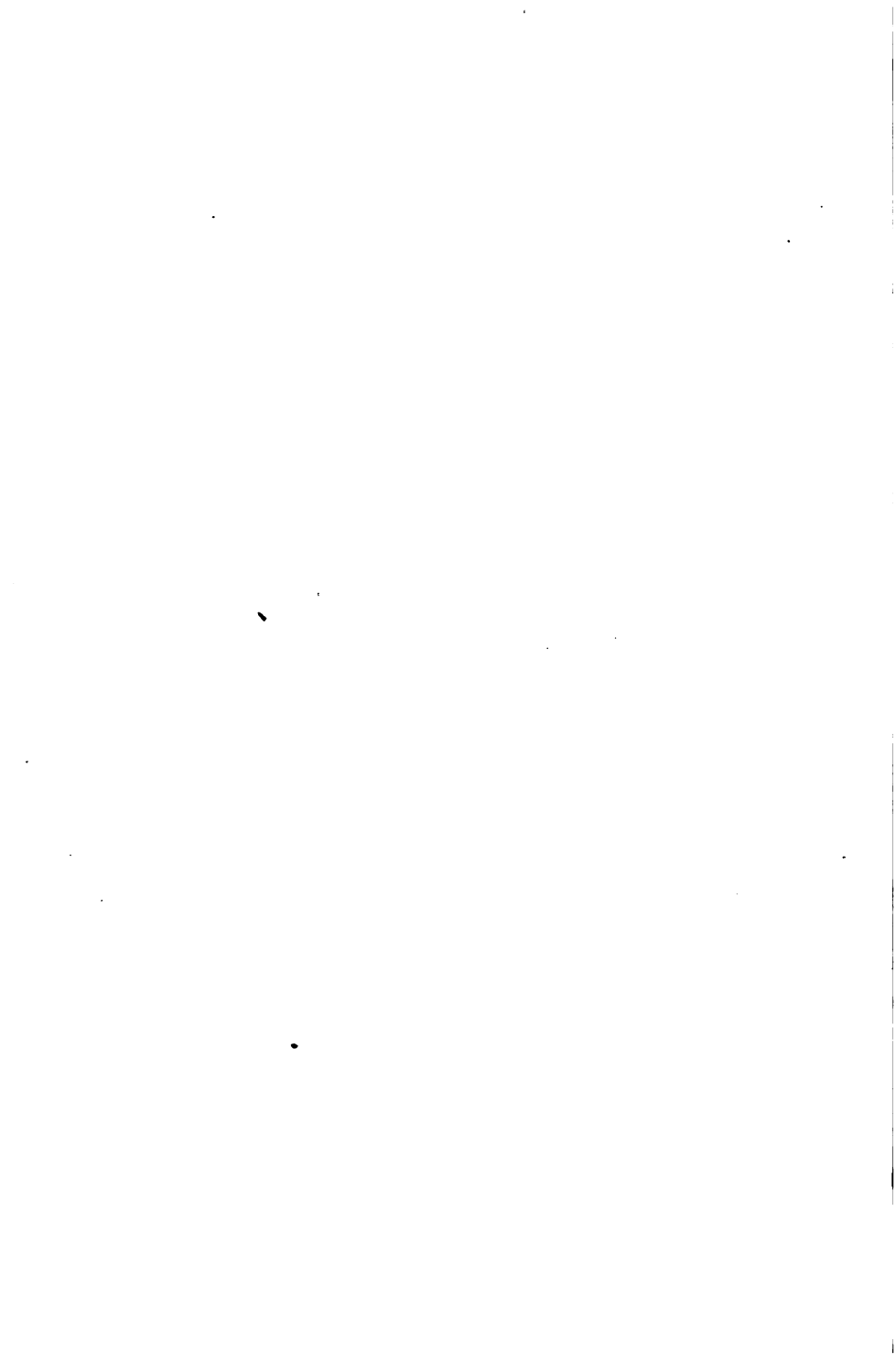
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**MODERN VIEW OF SYPHILIS AND ITS
TREATMENT**



THE MODERN VIEW OF SYPHILIS AND ITS TREATMENT

BY
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PREFACE

Some years ago I was called to see a patient whom I found unconscious, exhibiting indefinite cerebral symptoms. I was told that the physician who saw the case before me called it ptomaine poisoning, while another considered it typhoid fever. I rather favored the diagnosis of typhoid fever, but after a week's observation came to the conclusion that it was a case of cerebral syphilis, a diagnosis which was verified by the subsequent success of the specific treatment. This case, which is one of those published in this book, (Case 1), led me to further investigate the pathological conditions which syphilis, not recognized as well as recognized, produces in man.

The recognition of primary or secondary syphilis is usually a matter of no great difficulty. The patient presents himself promptly to the genito-urinary specialist, undergoes treatment for a year or two, or at least until his symptoms have disappeared, and then withdraws from medical control. In later years, however, he may come under the charge of the general practitioner, complaining of symptoms often exceedingly difficult of interpretation. The physician, in spite of a due appreciation of the clinical symptoms of latent syphilis, and especially in cases where there is an absence of a specific history, is often in the greatest doubt as to whether latent syphilis is present, the more so since the means for its detection have been until recently so uncertain. With the discovery and application of the Wassermann reaction, however, a new era has set in, and where once was doubt is now certainty. That sero-

PREFACE

diagnosis of syphilis is destined to almost revolutionize our personal views regarding many "internal" cases coming under our observation must be admitted by all. To my own very great surprise, a positive Wassermann test has been obtained in many of my cases where there seemed no reason to even suspect syphilis. The occurrence of such cases has afforded an incentive for further work along this line. The success which has resulted from it, as shown by the accompanying cases (Nos. 1 to 26), encourages me to publish them in this form, in the hope that they may be of help to others who encounter similar cases in their practice.

In the first part of this book I have endeavored to make clear the important rôle which the Wassermann test has now assumed. In the second part an effort has been made to describe the most frequent localizations and effects of visceral syphilis. As this is encountered so frequently by the general practitioner and recognized so rarely, I have described the pathology, symptoms and differential diagnosis as taught by my illustrious teacher, the late Professor Neuman of Vienna, adding complete records from my day book and bed side notes for the purpose of illustration.

Attention is called to the temperature charts under the chapter on brain syphilis. They add new proof for the claim that tertiary syphilis may be accompanied by a typical typhoid fever curve, a continua remittens.

As an appendix I have inserted a short sketch of the special therapy of syphilis as it is practiced at present by the foremost syphilographers, and so clearly elucidated by Pinkus in the "Deutsche Klinik."

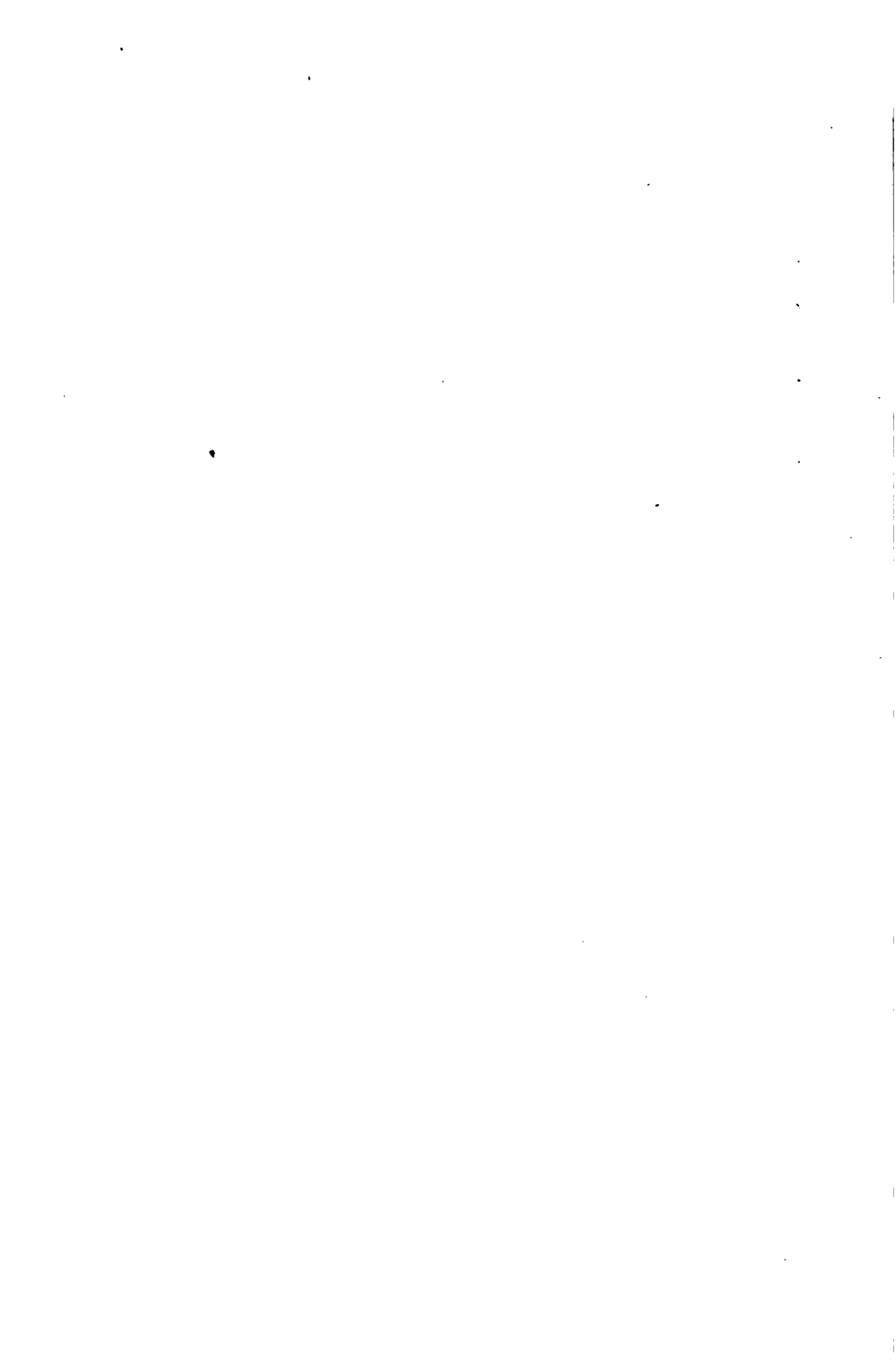
It is a pleasure to express my gratitude to Dr. Ralph Matson, the State Bacteriologist of Oregon, for his conscientious and absolutely reliable work done in connection with my cases, and to Professor George B. Wallace of the

PREFACE

Bellevue Hospital Medical College for his assistance in preparing my manuscript.

I will feel fully rewarded for this my modest effort, if it shall serve to induce my American confrères to avail themselves more frequently than heretofore of the Wassermann test.

G. B.



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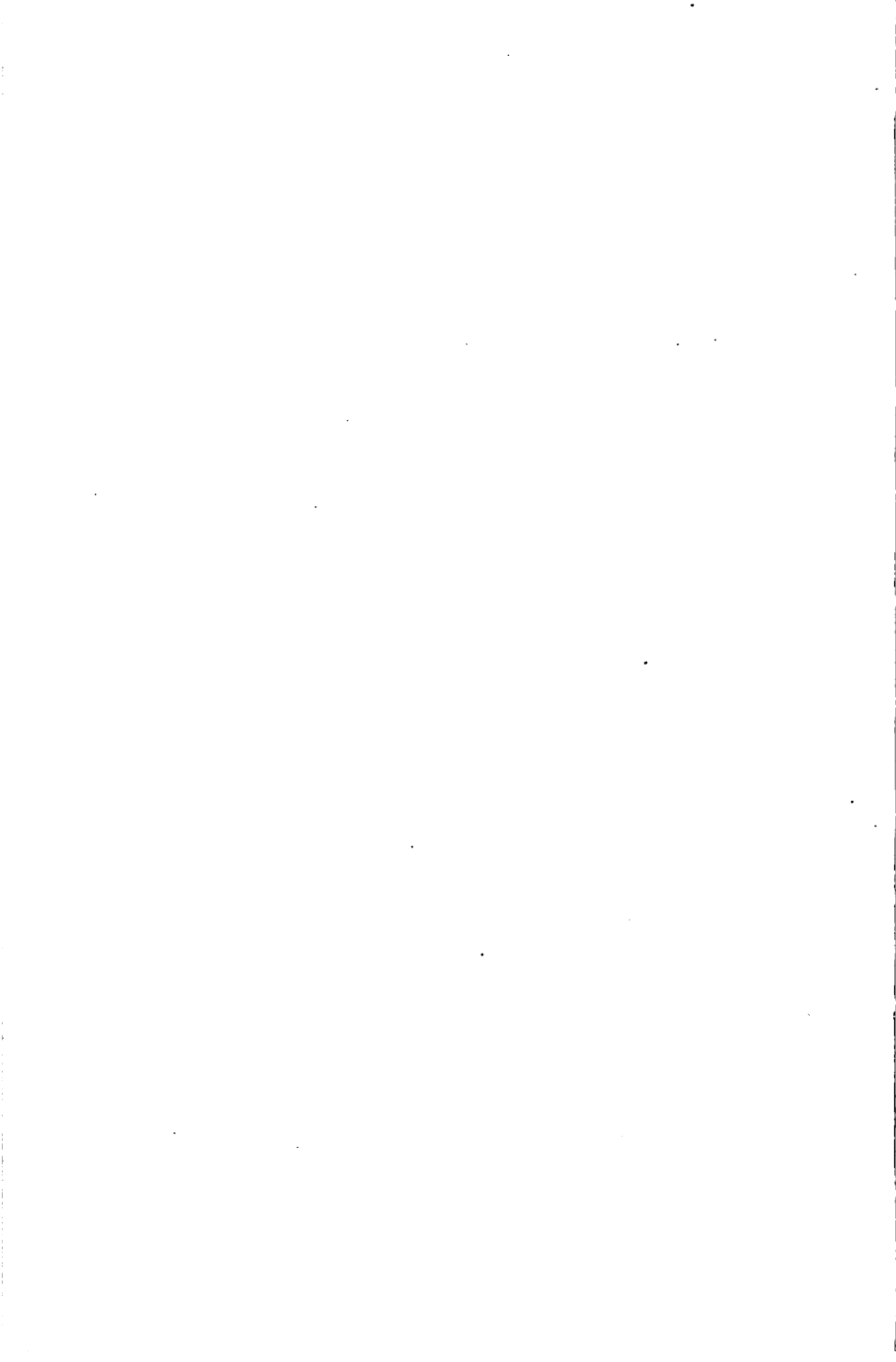
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PART I.

**BACTERIOLOGY OF SYPHILIS: DIAGNOSTIC
AND THERAPEUTIC VALUE OF THE
WASSERMANN TEST.**



Three discoveries of immense importance have enlarged our knowledge of syphilis during the past few years in an unexpected manner.

I. The Experimental Inoculation of Animals with Syphilis by Metchnikoff and Roux in 1903.

These two research workers have succeeded in inoculating with the syphilitic products—obtained from inoculated animals—other animals, higher as well as lower. Apes can be infected with syphilis. The *higher* apes are more sensitive, may be infected from various places of their body and as a rule show the general symptoms of syphilis afterwards. The *lower* apes, however, are not so easily inoculated unless syphilitic material is rubbed well into the eyelids or into the external sexual organs.

In these lower apes, positive general symptoms of syphilis have been observed only exceptionally. Neisser, however, proved that in spite of these animals *not showing the general symptoms, a general infection* did take place; because he could produce syphilis in other apes by inoculating these with the bone marrow, testicle or spleen tissue of the apes which had not shown any general symptoms!

Generalized syphilis has also been produced beyond any doubt in rabbits.

II. The Discovery of the Germ of Syphilis, Spirochæta pallida, by Schaudinn and Hoffmann.

Constant Occurrence.—Schaudinn and Hoffmann have proved the constant presence of spirochæta pallida in the syphilitic products. First they found it in the fresh tissue serum of an excised papule, later on in the papule itself, in primary lesions (even if the latter be not yet ulcerated), in aspirated serum of typical buboes, in the blood from the spleen. Since that time the spirochæta has been found in all forms of secondary syphilis, in the blood, in the fluid cerebrospinal, in the urine, in the products of the tertiary period, in the placental blood, and in *excessive* quantities in the organs of hereditary syphilitic fetuses.

Morphology.—One can see *fresh* spirochætæ under the microscope, with the “side light” improvement. They are four mikrons wide and show numerous very regular, narrow and steep windings which are the highest in the middle of the protozoon and grow less toward both ends; these ends are pointed. The length of the spirochæta varies within considerable limits. One can see spirochæta of only a few windings and others of twenty or more coils. Locomotion takes place by rotation along their longitudinal axis (cork screw like) or by pendu-

lum movements. We do not know whether these microörganisms belong to the "protozoa" or to the "bacteria." Up to the present time their pure culture has not been attained. In this regard, however, they are placed in quite distinguished company; with the leprabacillus, the recurrens fever spirillum, the malaria plasmodium.

Some of the facts known about the spirochæta are:

Effect of Mercury.—*The treatment with mercury does not show any conspicuous effect upon the spirochæta.* At least, we may prove the presence of spirochæta for a long time after all clinical symptoms have disappeared.

Neisser has succeeded in transmitting syphilis by inoculation from the internal organs of apes *fourteen days after the latter have been infected.* Thus the important rôle which the blood plays in spreading the spirochæta through the body has been proven.

The experiments which had as an object the lessening of the virulence of the spirochæta by continued inoculations from animal to animal, have rather had the opposite result—an increased virulence; thus the hope for serum therapy, at present at least, seems to have vanished.

Immunity.—Ricord's teaching that "the individual once infected with syphilis acquires a complete immunity against any new infection" has been shown erroneous by Finger and Landsteiner, for these

men have succeeded in inoculating animals with autochthonous as well as heterogenous syphilis virus. There seems to take place a *relative* immunity only, apparently growing from the time of the appearance of the primary lesion; or as Neisser puts it, the tissues are being changed in their tone. (Umstimmung der Gewebe.) It is positively possible to reinfect an animal after the syphilis has been cured. As a rule, a cure can be quickly brought about even in the latent state, with mercury and arsenic, and there have been achieved good therapeutic results even with iodide and quinine, though not as promptly and safely as with mercury and arsenic.

Infectiousness.—The view as to the *infectiousness of syphilis* has been greatly changed since the discoveries mentioned above. We know that well nigh all syphilis products harbor more or less the spirochæta pallida. All the papular forms are certainly very infectious.

The tertiary forms are infectious, too, contrary to the view held heretofore, though we must admit that they are less infectious if they appear in later years, because then they usually appear on places of the body which give less opportunity for their transmission to other persons by direct contact.

III. The Sero-Diagnosis of Syphilis by Wassermann, Neisser and Bruck.

The fact that our therapy of syphilis achieves excellent though not always complete results, puts upon diagnostic errors and consecutive therapeutic mistakes, the stigma of irresponsibility and ignorance of the physician who commits them. The physician who does commit them should be charged with criminal neglect in view of the most excellent diagnostic means which are at our disposal at the present time.

Value of the Diagnostic Treatment of Syphilis.—We all know that, in the most important and grave localizations of syphilis (like the affections of the internal organs or of the central nervous system, or of the bones and joints), our *clinical* symptoms have not proved to be always sufficient for a positive diagnosis: frequently we cannot get beyond a "probability diagnosis." In all these cases, nowadays, the Wassermann test should be applied. Before the discovery of the latter, we were generally compelled to resort to the so-called *diagnostic treatment* with mercury and iodide, a treatment which perhaps would not very well stand scientific scrutiny. However, we must admit that mercury and iodide, while not being harmless, still will not cause harm if used by a judicious and experienced physician.

If the desired result was obtained after treatment

with mercury and iodide, we certainly had fully done our duty as physicians; if the result, however, was not achieved, we may not have helped the case, but we surely did no harm.

If one considers the irreparable destructions of face, pharynx, bones, etc., caused by the simple neglect of thinking of syphilis, one must admit that in every doubtful case antisyphilitic therapy should be tried far more frequently than it has been tried heretofore. If the Wassermann test in such puzzling cases is positive, we certainly have a sound foundation for an antisyphilitic therapy. If it is negative, however, we must not always desist from antisyphilitic therapy, considering the fact that such a large percentage of cases of tertiary syphilis do show a negative Wassermann.

Such *diagnostic treatment* must be carried out diligently and energetically, if one wishes to draw any conclusions whatever from the success or non-success of the same. Such a diagnostic trial ought to be made, however, once only; but this once in such a manner that one should feel like saying afterwards, "If this treatment has not given any help, I am sure that mercury and iodides will not help at all."

The number of those cases in which one does or could do harm by antisyphilitic therapy, which later proves itself to have been superfluous, is in no relation whatever to the infinite advantage one gains by quick and energetic treatment in cases

which actually later on are proven to be syphilis! If the worst comes to the worst, all the damage done by such diagnostic treatment is at the most due to an idiosyncrasy against iodide or mercury. We know very well that certain forms of neuralgias, of joint affections, of actinomycotic processes, may react with iodide treatment, too; but all these are only exceptional cases compared with the specific action of iodides upon tertiary syphilitic lesions!

Wassermann Test.—In the *Wassermann reaction*, we are not dealing with a *specific* reaction, but with the reaction which is *characteristic for syphilis*, and must be considered a very valuable aid in clinical diagnosis. It is a reaction, the early theories of which have proved in the course of the few years of its existence to be to a large extent untenable; a reaction, however, the eminent practical value of which is established, although the real nature of the reaction is covered in darkness. All authorities agree that in manifest or latent syphilis, the reaction proves positive in a large percentage of cases.

It is beyond the scope of this monograph to enter into the technique or theory of the Wassermann test. It must be carried out by one with special training in order to avoid serious errors. A full account of it and other similar tests (Noguchi) may be found in the Medical Record, August 28th, 1909, in a paper entitled "Serology of Syphilis," by Ralph C. Matson, M.D. It is sufficient to say

here that the test is based upon the well-known Bordet-Geugou phenomenon of complement fixation.

Blood for the diagnosis is easily obtained by filling a 2 c. c. Wright capsule, which consists of a piece of glass tubing drawn out straight to a narrow point at one end, whilst the other, also drawn out to a point, is curved round parallel with the main tube as shown in Fig. 1. To use it, proceed as follows: •

Prick the patient's ear, or if preferred, the thumb (after the application of a wide India rubber band), and squeeze out a few large drops of blood. Place the tip of the curved end of the pipette in this drop, holding the pipette straight end pointing upward (Fig. 2). One will find that the blood will run rapidly into the curved tube by capillary attraction. Continue to squeeze out more blood and suck it up, until 15 or 20 drops have been collected. (It may be necessary to reapply the bandage.) Then gently warm the tapering portion of the straight end of the pipette in a spirit lamp or match-flame and afterwards seal the tip. (Fig. 3.) As the air which is now imprisoned in the upper part of the pipette contracts, it will suck the blood from the curved limb into the body of the pipette, which can be inverted and the blood shaken down into the tip. But care should be taken not to do this until the glass becomes cold, as the serum loses some of its properties when heated.

Seal the other end by dropping on some sealing wax.

The blood should be sent at once to a laboratory.

Clinical Results With Wassermann Test.—MANIFEST

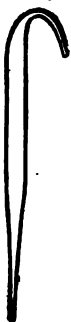


Fig. 1.

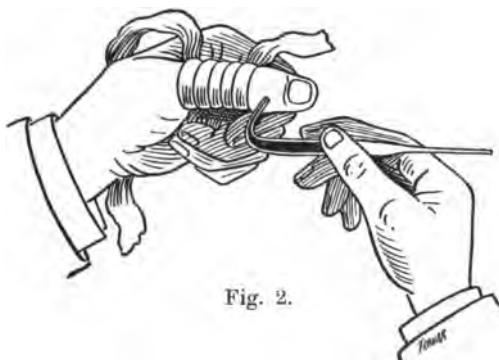


Fig. 2.



Fig. 3.

PRIMARY, SECONDARY, AND TERTIARY SYPHILIS.—*Fr. Bering*, in his publication from Klingmueller's Klinik in Kiel, reports a positive Wassermann test in 111 out of 113 cases of secondary syphilis.

Hauck examined 38 cases of manifest syphilis in

its earliest stages, which showed a positive reaction in 92%. The manifest cases examined in the late stages, numbering 13 cases, showed a positive reaction in 77%; the latent cases, numbering 31 cases, showed a positive reaction in 74% of cases.

Becker, reporting from Prof. Hoppe-Seylers Klinik in Kiel, says that among 350 tests made, the manifest syphilitics gave a positive reaction in 63.6% of cases in the primary stage, in 90% of the secondary stage, and in 55.5% of the tertiary; this latter, rather low percentage, he thinks, is explained by the fact that the most of the cases showing negative reactions have already undergone several courses of antisiphilitic treatment.

From all these reports, we must conclude that *the positive Wassermann in an individual means that this individual at some time has been infected with spirochæta pallida.*

And what does the *negative* Wassermann test mean? It renders excellent services as a confirmation of a clinically negative examination. Wassermann himself, in reporting 1,010 tests made on absolutely *normal individuals*, states that *not once* did he find the test *positive*.

On the other hand, we must consider that the Wassermann test proved positive in cases of *frambæsia*, in cases of *trypanosomiasis*; furthermore, in cases of *scarlatina*. In these latter cases, however, it was proven that the reaction turns negative at the latest in 80 to 90 days after the infection, so that

we really may safely say, that with the exception of these above mentioned exotic diseases and the scarlatina, *a positive Wassermann test always proves with certainty a present or past syphilitic infection of the organism.*

If there are men like *Nonne*, who claims to have found a positive Wassermann in alcoholic pseudotabes, in cerebral tumor, epilepsy, or multiple sclerosis; or men like *Michaelis*, who claims to have found positive Wassermann tests in typhoid fever, contracted kidneys and phthisis; or, men like *Elias*, *Neubauer*, *Porges* and *Salomon*, who have found, out of 25 cases of phthisis, the Wassermann test positive in 5 cases; or men like *Decastello*, who has found the Wassermann test positive in valvular heart diseases, tuberculosis of the kidney, arteriosclerosis, myelogenous leukæmia and cirrhosis, we must hold before them the statement of *Seligman*, who claims that he is not in possession of any extract at present which would not at some time in some concentration give a positive Wassermann test with any non-syphilitic serum.

Meier could prove that an extract which in the beginning gave only specific reactions, after a while, though applied in the same amount, would give a positive reaction with non-syphilitic serum.

These two statements point to the fact that we must lay the most grave stress upon using *only proper extracts*, which have been *tested most minutely as to quality as well as to quantity.*

Furthermore, we should consider, as did Neisser with his immense material, only *complete* complement binding as a positive Wasserman test. For *incomplete* binding we certainly find in other diseases, too; so for instance, *Saathoff*, in his report from the von Mueller Klinik in Munich, mentions that he found incomplete complement binding in well nigh all cases of scarlatina and ascribes this fact to the faulty technic on the one hand, and to the method on the other. *A complete complement binding he has not seen in any other disease but syphilis*, though he admits that in a large number of older and dubious cases of latent syphilis, he found an incomplete complement binding only; but he at the same time admits that he *in all his experience has not seen one case of active syphilis which would have given a negative reaction*, and his report is based upon 500 tests. In the case of florid syphilis (secondary stage) he has found a very positive Wassermann every time; so also in all cases of tertiary syphilis, which had been clinically diagnosed as such beyond any doubt.

In view of the above-mentioned discrepancy, it was a relief to me to peruse the report on *tests made in post-mortems* by Fraenkel and Much in the Eppendorfer Krankenhaus, in Hamburg. These men found:

(1.) Out of 18 cases of phthisis, the Wassermann test negative in 17, positive in one. In this latter case, there was present a bilateral fibrous orchitis,

which, as the author thinks, was to be explained by a former syphilis.

(2.) Six cases of lobar pneumonia. Wassermann test negative.

(3.) One case of broncho-pneumonia. Wassermann positive. This case was a poor emigrant's child, who had been sent to the hospital, suspected of having smallpox. The post-mortem proved it to be syphilis.

(4.) One case of typhoid. Wasserman test proved negative.

(5.) One case of diphtheria. Wassermann test negative.

(6.) One case of mitral endocarditis. Wassermann test proved negative.

(7.) One case of *Lepra nervorum*. Wassermann test negative.

(8.) One case of *myelogenous leukaemia*, in which Wassermann test proved *positive*. This positive reaction ought to be a stimulus for further research work to be done in this blood disease, the etiology of which unfortunately is still unknown to us.

(9.) Twelve cases of scarlatina, of which five cases gave a positive reaction. We have referred to these cases above.

(10.) Six cases of carcinoma. In five of these Wassermann was negative, in one of them it was positive, and in this one they could find syphilitic scars on the lower extremities.

(11.) Four cases of brain disease. One hemorrhage, Wassermann negative.

(12.) One case of *tabes*. Wassermann positive.

(13.) One case *encephalomeningitis*. Wassermann negative.

(14.) One case *chronic leptomeningitis*. Wassermann negative.

(15.) One case of "*plaque jaune*." Wassermann test positive.

(16.) *Liver cirrhosis*. One case negative; another case positive. In this latter, they found simultaneously *syphilis of the kidneys*.

(17.) Twelve cases of *arteriosclerosis*, in nine of which Wassermann test was negative; in three, which were co-existing with *aneurysma aortæ*, Wassermann test was positive in two and negative in one.

(18.) Twenty-three cases of *Heller's aortitis*, all of which proved positive, mostly in persons from 40 to 50 years of age, out of which only two showed other syphilitic lesions (*peri-hepatitis, tabes*).

(19.) Thirteen cases of *fibrous orchitis*, out of which only two showed positive Wassermann reaction. These last statements seem to be a grave proof against the stand taken by some authors (Osler included), that fibrous orchitis should always be considered a syphilitic lesion in the testicle.

LATENT SYPHILIS AND META SYPHILIS.—Let us see now what results research work has brought about

in the cases of so-called *latent syphilis* and in the *meta syphilitic diseases*.

As an introduction to these questions, I wish to recall that the spirochæta pallida, two to three weeks after entering the body, causes the formation of a nodule or, sometimes, only of an insignificant-looking lesion at the point of entrance into the body. We call this the initial syphilitic lesion.

The indurated nature of this lesion is already the expression of a general infection, as has been proved by many positive Wassermann tests in cases where the spirochæta pallida was found in the serum of the lesion, where, however, there was, as yet, no eruption present on the body. Therefore, we must consider the time which passes from the moment of infection until the appearance of the induration, the *stage of first incubation*. It takes, however, a certain time until the spirochæta, circulating in the blood, has sufficiently increased in numbers to cause, in the various organs, those lesions which we consider characteristic for syphilis. During this time, from the appearance of the sclerosis up to the appearance of the exanthem and the other lesions of this so-called secondary syphilis, the patient enters the *period of latent syphilis*. This period may be divided into an *early period*, lasting up to the third year of the disease, and the *late period* of latent syphilis, starting from the third year of the disease. I mention explicitly the third year of the disease, because Neiser, who ranks nowadays among the

first syphilologists, does so, in consideration of the fact that the tertiary lesions occur mostly in the third year after the infection.

Saathoff tested 14 cases of progressive paralysis, Wassermann test always positive. Of 36 cases of tabes, he found in 34 the Wassermann test positive. In 25 cases of brain and spine syphilis the Wassermann test was positive in all, and in one-half of these cases the diagnosis could be verified either by a post-mortem or by the success of the specific treatment. He adds, at the same time, that the cases which have been treated specifically, previous to the test, showed a partial positive Wassermann only, but he states explicitly that in none of these cases has the Wassermann test been really negative.

All cases of aortic aneurysm gave a positive Wassermann. In cases of aortic insufficiency, the Wassermann test was positive 12 times. In several cases of angina pectoris, the Wassermann test was positive. In 6 cases of liver diseases he found the Wassermann test positive, and remarks that icteric serum by itself is apt to bind the complement. In nephritis he found Wassermann test positive 10 times. In paroxysmal hæmaturia, of which he observed three cases, he found Wassermann test positive in all three.

Donath reports a positive sero-diagnosis in 85.3% of 27 cases of pure aortic insufficiency, mesaortitis, or aneurysm. Among the 27 cases were three in

which there was a history of articular rheumatism, but the features of the joint affection showed that it must have been of syphilitic nature rather than true rheumatic polyarthrititis. The gummatous form of syphilitic synovitis and ostitis may be accompanied with disturbances suggesting rheumatism. The aortic affection in these cases had previously been regarded as the consequence of infectious articular rheumatism, and in four other cases abuse of tobacco, and in two abuse of alcohol, suggested the toxic form of mesaortitis, until the sero-diagnosis gave the clue. (Abstr. from J. A. M. A., December 18, 1909.)

Hauck tested 17 cases of *paralysis*, of which all gave a Wassermann. Further, he tested two cases of *tubes*, one of which gave a positive Wassermann, while, in 184 control tests made, only two patients gave a positive Wassermann.

Among 12 cases of *leukoplakia*, reported by *Purkhauer*, 10 gave a positive Wassermann test (in spite of a few having been treated quite thoroughly), and only two gave a negative reaction. This outcome gave a positive basis for again instituting specific treatment, which in several cases was followed by splendid success. Most of the cases of *leukoplakia*, therefore—provided, of course, there has been a syphilitic infection previously—are actually syphilitic, not yet cured.

T. Plaut found that among the 156 *paralytics* he tested, *everyone gave a positive Wassermann*; that

the liquor spinalis of paralytics, without exception, gave a positive Wassermann; in fact, Plaut believes that this is one of the earliest means of recognition of the disease, and positively states that paralytics ought to be considered as syphilitics, inasmuch as the serum gives the same results as are found in florid syphilis. He tested, further, 22 cases of *lues cerebri*, 19 of which gave a positive Wassermann, which means a percentage about the same as in florid syphilis. Most interesting are his tests made on *luetie families*. So, for instance, a boy of 13 years, with a juvenile paralysis, gave a positive reaction, though his parents absolutely denied syphilitic infection. The mother, however, when tested, gave a positive reaction. Of the five other children, one with stationary idiocy gave a positive reaction, as did one nervous imbecile brother and one sister.

Similar conditions were found in *descendants of paralytics*, in *infantile cerebral paralysis*, or in imbecile and psychopathic children from luetic parents. Out of 52 tests made, 44 gave a positive reaction, a percentage which is equal to the percentage of positive reactions in latent tertiary syphilis of the adult.

Becker, whom we mentioned before, examined 80 prostitutes, out of whom 41.25% gave a positive reaction, 52.5% gave a negative reaction, while the result in 6.25% was questionable. *In dubious cases the positive Wassermann test to him always meant*

positive indication for antisyphilitic treatment. In connection with these results, he states, however, that the recommendation made, to subject every prostitute to intermittent serum tests and in cases of the positive Wassermann to force antisyphilitic treatment, would be somewhat premature, because in some cases, though being energetically treated and though all clinical symptoms may have disappeared, the Wassermann test may still remain positive.

LATENT AND CONGENITAL SYPHILIS.—But to come back to the value of the Wassermann test in latent syphilis, we must consider the results in cases of *congenital syphilis*, which is actually a latent state of syphilis; at least, such has been proved by the 140 cases examined by K. Baisch in the Clinic of Prof. Döderlein in Munich. He not only tested the blood of the mother with the Wassermann test, but tested the blood of the child as well, and he looked for the *spirochæta pallida* in the placenta.

In his report he has:

(1.) Twenty-four cases of negative Wassermann test in the parents and no *spirochæta* found either in the fœtus or in the placenta.

Considering that we have been used to record miscarriages of macerated fœtuses as due to syphilis, these findings deserve our fullest attention. In many of these fœtuses, there could be found another etiology for their death, such as a cord wound

around the neck; retarded development (cleft palate, retarded development of the extremities); nephritis of the mother; habitual abortion of the mother due to gonorrhœa, etc.

Considering, however, that luetics with manifest symptoms in 10% of the cases give a negative Wassermann test, as Wassermann himself states, one could not very well exclude the possibility of syphilis of the mother in these cases. For this reason, the authors examined simultaneously for *spirochæta of the fœtus*, and, inasmuch as the examination of congenital syphilitic parakidneys gives positive results in 97.5% of the cases, syphilis as an etiological factor could be excluded in most of these cases.

(2.) The second group of cases examined comprises 102 cases in which the mother gave a positive Wassermann test and the children were positively syphilitic. Among these cases, they could clinically diagnose syphilis in 27 mothers (only three mothers who gave a syphilitic history proved a negative Wassermann). *The remaining 75 mothers of syphilitic children did not show any clinical signs of syphilis, and, in spite of that, gave a positive Wassermann; but, more than this, the authors found in the decidua and intervillous spaces of the placentas spirochæta present. After the confinement, this positive Wassermann reaction did not disappear in the mothers. Furthermore, there were cases where the mother gave a positive reaction, the children a negative reaction, and vice versa.*

All these facts prove that the complement binding substance has been produced by the organism, in the serum of which it was found. That means that *a positive Wassermann test is produced only by an active syphilitic virus, and that these clinically healthy mothers have been the bearers of spirochæta, which means that they were not healthy but syphilitic!!!*

We already knew, before the discovery of the Wassermann test, that a clinically healthy woman may give birth to a macerated syphilitic fœtus from her syphilitic first husband, and, further, she may do the same with her second and third husband, though these be clinically well and show a negative Wassermann.

There is only one explanation for these findings: *The apparently healthy woman in reality has to be considered syphilitic, and transfers her syphilis to the child coming from a healthy father.*

So we can now explain *Colle's law*, that "the mother of syphilitic children is immune against syphilis," simply because she herself is syphilitic. So we can explain the *Profeta law*, too, which claims "*immunity against syphilis of clinically healthy children born from luetic parents.*" *These children are not healthy; they are syphilitic and give a positive Wassermann.*

(3.) There is a third group of 12 cases where the mother gave a negative Wassermann, while spirochæta was found in the fœtus.

There arises the question: *Are these clinically healthy mothers who gave a negative Wassermann actually free from the syphilis of their husbands, to which the child has succumbed?* In other words, *does a paternal spermatogen propagation of syphilis exist?* No, I say, these mothers are not healthy, for while they appear to be so, the spirochæta has been found in the maternal part of the placenta as well as in its intervillous space, which means that spirochæta has been found in the blood circulating in the mother. These apparently healthy mothers, with the negative Wassermann, giving birth to syphilitic children, are actually syphilitic, for, out of 100 cases tested, only 12 (comprised in this last group 3) gave a negative Wassermann, and this is about the percentage of negative Wassermann found in positively syphilitic persons by other authors as well.

Thus, we find the younger Fournier's book with contributions to the diagnosis of syphilis hereditaria tarda rather superfluous, for, while he tries to explain a long row of symptoms appearing in children, young people, and adults, by a syphilis of the parents and grandparents, enumerating various forms of dystrophy and uncertain symptom complexes, we are nowadays in a position to dispel many of these fantastic errors by making the Wassermann test.

VALUE OF THE TEST IN OBSCURE MEDICAL CASES.—
The reaction will be a guide for our diagnosis in

many a *terra incognita*! We are entering the land in which clinical diagnosis may utterly fail; we find ourselves face to face with diseases which give us only a vague suspicion of syphilis, in which we, however, apply the Wassermann test, either with the purpose of excluding syphilis or because clinical experience has taught us to always think of syphilis in dark cases.

Let me quote a few instances: A woman, the picture of health, patient of *Von Mueller*, has been suffering with daily headaches. The doctor does not find anything suggesting tuberculosis or syphilis. The Wassermann test proves positive! The husband admits having suffered a few years ago with some liver trouble, in which the suspicion of syphilis could not be entirely disregarded. By the positive Wassermann test that probable connection between these two diseases has been established, showing that one diagnosis corroborates the other.

This example alone shows very plainly how the reaction at times throws light into darkness which, before, seemed impenetrable to us!

I wish to report here 26 cases, in 21 of which the Wassermann test was made either to corroborate the diagnosis already made or to prove the necessity of antisyphilitic treatment in cases where no diagnosis of syphilis could be made in spite of all appreciation of our present knowledge of clinical symptoms of latent syphilis. This latter class, comprising 8 cases, I consider of especial importance,

and wish to show in the following few histories the nature of the cases concerned. (These cases are reported *in extenso* as No. 19-26 in Chapter XII.)

CASE 1.

B. H. E., a very active man of 36 years of age, complains of peculiar spells of lameness in both knees and numbness in the lower extremities when he stretches or bends them. He suffered with hot flushes to his head, and thinks "his nerves are sick." At the same time, he states that he has had night sweats for the last 4 to 6 weeks; he had these also 3 years ago, accompanied by expectoration of yellowish sputum in which tubercle bacilli were found. On examination, his lungs proved perfectly normal. However, I found that both inguinal regions presented scars. These, the patient admits, were caused by the extirpation of the inguinal glands performed some 3 years ago after they had been swollen for over a month, consecutive to a small ulcer on the preputium. The rest of the glands in his body were enlarged, hard, and indolent. With the exception of rather slow pupillar reflexes, the rest of the body did not show any traces of syphilis. The *Wassermann* test, however, made by Dr. Matson, was *positive*, thereby proving this case to be a case of latent syphilis.

CASE 2.

A married woman, 28 years of age, the picture of health, weight 170 pounds, 5 feet 8 inches tall, com-

plaints of some wheezing on deep breathing for the last 10 days. She, at the same time, wishes to know the cause of her sterility. The physical examination of the body, of the urine, of the blood, reveals absolutely nothing abnormal. This was on April 2nd, 1909. She repeatedly consulted me for some indefinite symptoms until, June 30th, she came to my office with her right inguinal gland swollen and somewhat sensitive. I could not find, in spite of the most careful examination of the sexual organs, as well as the rest of the body, any explanation for this condition. Tincture of iodine, applied externally, did not improve the condition, and when I saw her on September 29th again, the inguinal gland had broken open, discharging a clear serum. The arcus palatoglossus showed a lentil-sized, sharp confined, oval ulcer, covered with yellowish detritus. On close questioning, patient confesses that 11 years ago, she had a few sores on the labium. A few months later appeared pustulæ on the tibiæ, the thighs, and the side of the thorax, leaving visible lentil-sized scars. The thought of latent syphilis immediately came to me. The close examination of the body then showed that the axillary glands on the right side were hard and enlarged the same as the right inguinal glands. The *Wassermann* test gave a very *positive* reaction. Under inunction treatment, instituted immediately, perfect recovery.

CASE 3.

A young school teacher of 21 years of age complains of losing her position on account of ill breath. The examination shows, with the exception of ozaena ulcerosa and the constant presence in the urine of excessive indican, nothing abnormal in the body. She is a *virgo intacta*. Her mother resents the idea of hereditary syphilis. However, when the *Wassermann* test next day proved to be *positive*, the mother, under the weight of this testimony, breaks down and confesses that the young lady is her *adopted* child only, and that the real mother of the young lady died from "broken heart" over her husband's dissipations. On iodide treatment, the general health of the patient has improved wonderfully.

CASE 4.

Mr. B., a very active business man, 40 years of age, had been paralyzed in both his arms for the last 10 weeks. The disease started with pain in the region of the 4th to 6th cervical vertebra, radiating between and into both shoulders; the head was pulled backward frequently; the shaking of the street car would catch him in the back of his neck. *At night he felt worse.* He complains all the time of paræsthesias in the finger tips of both hands, coming on in spells. The pressure on the 4th to 6th vertebra is very painful. The sensibility of his skin is normal. The pupils are of different size,

left larger than the right, somewhat irregular, not reacting well to light.

This man has been treated by a well-known nerve specialist of 20 years' experience with electricity and massage for over 2 months, apparently without relief; for he still had a boy with him who opened the doors for him, helped him put on his hat, carved the meat, etc. I diagnosed the case as one of "leptomeningitis cervicalis syphilitica," though the thorough examination of the body showed absolutely no symptoms whatever to suggest a former syphilis. His wife, though, whose case we are going to mention below, had two miscarriages, the first during the 7th month, and the 2nd in the 8th month. She gave birth to 3 children, of whom one is now living. Four years ago she miscarried in the 3rd month again. The patient himself admits that 18 years ago the physicians thought he had a soft ulcer; assured him, however, that it was *not syphilis*; so he married 15 years ago. I put the man on specific treatment. Three weeks later he was completely well. At that time, no Wassermann test was made. However, in 1909—about three years after this illness—the *Wassermann* test made was *positive*, and proved, thus, the correctness of my diagnosis, if the latter had not already been proved correct by the success of the treatment alone.

CASE 5.

Mrs. B., the wife of patient No. 4, was operated upon several years ago for floating kidneys and gastroptosis on account of excruciating spells of pain in the kidney region and along the waist line. These latter pains were greatly relieved by the operation, though, at present, she has yet characteristic lancinating pains in both her legs. *Rigid small pupils, patellar reflexes absent.* She was put on specific treatment at the time of her husband's disease. In 1908, while standing still, trying to board the street-car, she broke the right femur in its upper third. It was set, afterwards wired, but after the cast was taken off, 4 months later, it broke again, as the X-ray showed, at the place next to the old fracture. In consulting with the surgeon, I suggested *Wassermann* test, which proved *positive*. The leg was set, the patient put on specific treatment, and two months later the X-ray showed the formation of a firm *callus*, *which the patient was unable to throw out before the specific treatment had been instituted*, as the X-ray plate showed plainly.

CASE 6.

Mr. G. W., a man of 40 years of age, consults me about a general psoriasis on October 25th, 1907. He is put on Atoxyl injections and Drew's ointment. The psoriasis disappears, but comes back

again as it did in former years. A few months ago he complained of feeling short of breath when lying down at night, with pain in the region of the heart, radiating to the left shoulder and arm. The examination of the heart shows a plain systolic murmur of the aorta, accentuated second sound. The *Wassermann* test is *positive*. He is put immediately on specific treatment: inunctions and iodides. After 13 inunctions *complete relief*, so far.

CASE 7.

* On March 2nd, 1907, a patient, Mr. W. M. C., age 52, contractor, consulted me about a *bilateral pleurisy*, which has necessitated his being tapped 5 times on the left side of the chest and 13 times on the right side of the same, *since August 13th, 1906*. At that time we had no facilities for making a *Wassermann* test. The patient, however, gave a history of a specific ulcer 27 years ago. The glands of his body were all hard and somewhat swollen. Otherwise, there was nothing pointing to a former syphilis in his case, except the fact that he suffered *pains under his left rib arch, especially at night*. The patient was put immediately on inunction treatment and iodides, and by the end of May, I had the satisfaction of *finding no traces of any exudate in either pleural cavity*. I have kept this patient under observation until *March 25th, 1909, without noticing any recurrence of the pleural exudate*. The *Wassermann* test made on that date was *negative*.

A few weeks later, the wife of the patient reports his death, which occurred with the symptoms of a general paralysis.

CASE 8.

Mr. J. S., 38 years of age, consulted me on *September 16th*, 1908, on account of pain in the left chest, left armpit and shoulder. This pain comes on only when he retires, not at all in daytime, when he works (he is a butcher). The examination of the heart shows a *loud systolic and diastolic murmur in the second intercostal space at the costochondro junction*, this being the place which is very painful to pressure. The second rib at this place is somewhat bulging, pulsating visibly. Left subclavia visibly pulsating, There is a sensitiveness to pressure of the left second, third, and fourth ribs, of the left second intercostal nerve, along its whole course, the pain being *of a lancinating nature*. The apex is one finger width inside the mammillary line. He admits having had a soft chancre as a soldier, when 20 years of age. On iodides, the pain leaves him.

November 1st, 1909, Wassermann test was *partially positive*. The patient at that time complains of a recurrence of his old trouble. He is put on *inunction treatment*, since there was no doubt about the specific nature of the disease. The result was most remarkable. *The man who, only two weeks ago, was lying flat on his back, suffering with*

excruciating pain in the region of his heart and left arm, without being able to turn, gasping for breath, at times violently, so that his wife thought him to be choking to death, is working now, without any pain, spending peaceful nights.

Saathoff has succeeded in discovering in his clinic alone 25 cases of *congenital* syphilis, previously unsuspected.

The Wassermann reaction leads us into problems, where we could not see any before, and where clinical research finds itself helpless, at the end of its resources!

The pathogenesis of the individual has enlarged into the pathology of the *family* and of the *pedigree*.

Everyone knows that even to the skilled diagnostician, the recognition of a *syphilitic ulcer* or *exanthem* is connected some times with considerable difficulty.

We must not lay any stress whatever upon a *negative anamnesis*, though a positive anamnesis is very valuable. The old proverb, "Quivis syphiliticus mendax," we find often true nowadays; but, aside from willful lies, we know that the *primary* syphilitic lesions in man, and still much more frequently in woman, may appear so unimportant and insignificant that they entirely escape our notice. They do not always offer the characteristic picture of a hard chancre. Neisser thinks that we are well nigh always right when we, in spite of not seeing any

typical symptoms, suspect syphilis in any venereal infection if it persists for some weeks!

But the *secondary* symptoms may also be entirely absent! We know that the macular syphilis may appear in so insignificant and fickle a form that even in spite of careful observation it may be overlooked! The same is the case with the throat symptoms. Mucous patches on the anus, etc., may not appear at all. In short, all the early syphilis symptoms of the first two to four years may have been actually or apparently absent.

Everyone knows the *suspicious induration* which remains after the cauterization of an ulcer with the nitrate of silver pencil, knows the difficult diagnosis of *extra-genital infection*, in the finger for instance, the lesions of the tonsils, often so peculiar! Statistics show that 8 to 10% of all syphilis cases in Germany have been brought about by accidental infection, are extra-genital syphilis, where the primary lesion was located on lips, finger, breast, tonsils, nasal cavity, rectum, or caused by cut from razor, bite, cupping wound, etc. In all these cases there must be reached an absolute diagnosis, in consideration of the paramount importance which the mercurial treatment assumes for the individual as well as for the family and for society! A positive Wassermann in these cases decides the diagnosis.

We must consider, too, those light-minded people who are too willing to forget their former infection, and to whom we must *prove positively*, that they are

syphilitic! How can we do it, without using the Wassermann test?

Seafaring people frequently infect themselves in some harbor, go to sea, notice afterwards some lesion on their sexual organs, which does not concern them very much; they are treated for a few days locally, then, if they have any fear of consequences at all, they may even rub with mercury ointment. Coming home, however, after some time has elapsed, all symptoms have disappeared, and we do not know whether they are syphilitic or not. The Wassermann test will help us out of the embarrassing position we are put into as to the diagnosis.

Or, take for instance, a married woman who miscarried frequently. Neither father nor mother will admit any former syphilitic infection, or they will even indignantly resent any possibility of any infection! Here again the Wassermann test helps us out of a difficulty.

And how often do we feel embarrassed in making a differential diagnosis between scrofula and tertiary syphilis!

Syphilitic diseases of the *central nervous system* may simulate all possible disturbances of the physical as well as of the intellectual development, not infrequently resembling *idiocy*, and, still, the anamnesis does not support, in the least, the idea of syphilis.

All these cases usually are either hereditary syphilis or syphilis acquired in infantile life through ac-

cidents. In this connection may be mentioned wet nurses, infectious kissing, vaccination, circumcision, etc. The lack of syphilitic anamnesis in children from 10 to 15 years of age is certainly of no importance at all.

According to Neisser, we should not attribute any diagnostic value to the swelling of the cervical or other glands if we are to decide the question whether syphilis is present in a case or not. Sometimes we do not find any indolent buboes even in typical primary lesions.

And how many people are there, who really do not know that they are syphilitic? And this is the worst of all, the "Lues ignota."

Here may be mentioned the cases of ulcers of the leg, diseases of the eyes, found to be syphilitic by Bering, *without having any clinical evidence whatever.*

The importance of having wet nurses or governesses, maids, who come into such close contact with children, tested, in a *not conspicuous way* at all, for syphilis, is at once apparent.

VALUE OF THE TEST IN OBSCURE SURGICAL CASES.—The *surgeon* should avail himself much more frequently of the Wassermann test. Unfortunately for himself, as well as for the patients coming into his domain, he does not. In connection with this point, I want to mention the extensive work done in that line by Dr. Baetzner, in Prof. Bier's Clinic in Berlin. He has tested 120 cases, and reports

especially 25 histories in which the *anamnesis* was *entirely negative* as to syphilis, and in which the clinical picture, even with correct valuation of all specific symptoms, could not suggest any syphilis. The Wassermann test was used in all these cases as a new diagnostic aid in the differential diagnosis of:

1. Sclerosis and carcinoma.
2. Infected cut wound and sclerosis.
3. Infected bite and sclerosis.
4. Gummatous and tuberculous ulcer.
5. Stricture of the rectum, syphilitic or cancerous.
6. Sarcoma of the femur or gumma. This case especially remarkable, because the tumor was ready for operation when the Wassermann test proved positive, and the antisymphilitic treatment caused the disappearance of the tumor.

7. Lupus of the neck, recognized by the Wassermann test as papulo-serpiginous syphilis.

8. Tuberculosis cutis verrucosa, in which case gummata were diagnosed.

9. Ulcus cruris, harmless looking, recognized as gumma.

10. Fibroma, sarcoma of the muscles, recognized as gumma with the help of Wassermann test.

11. Tumor of the tongue, recognized as gumma. Specific treatment successful.

12. Lockjaw of the inflammatory type, recognized as syphilitic myositis, cured by potassium iodide.

13. Arthritis: tuberculous, gonorrhœal, rheumatic or syphilitic.

14. Osteomyelitis: tuberculous, neoplastic or syphilitic.

15. Lymphoma: tuberculous, sarcomatous or gummatous.

16. Syphilitic parotitis.

17. Tumor of the stomach or liver syphilis.

From all these examinations he concludes that the *positive Wassermann* is a proof that there has been, or still is, syphilis present. It is the expression of a constitutional anomaly, and *does not give any special organ diagnosis*. The *local lesion in question is not necessarily, even with the positive Wassermann, of a syphilitic origin*, for it is clear that various diseases may co-exist. We know very well that tuberculosis and hereditary syphilis quite frequently are associated; furthermore, that a body, debilitated by syphilitic virus, is easily attacked by other infections. This shows, also, that there are *limitations of the use of the Wassermann reaction for diagnostic purposes*. The *negative Wassermann* does not prove that there has not been or that there is not any syphilis; for in 10% of absolutely proven syphilis, the Wassermann test is not positive. On the other hand, in some cases it may be found positive, though they have nothing to do with syphilis.

As has been said before, we must admit that biologically, as well as clinically, *the test cannot be*

considered a specific one, and so we are not surprised if one, not posted on the subject, considers, with some logic, the whole method of doubtful value only and has little confidence in the same. But, if we consider Prof. Kopp's statement—and Kopp certainly is one of the skeptics—*that the fact of the positive reaction* in the vast majority of luetic cases must be considered an absolutely proved truth, we will certainly coincide with Neisser's enthusiasm about the test.

NEISSER'S CONCLUSIONS.—I wish to quote the main points of Neisser's conclusions concerning the reaction:

“*First.*—In innumerable cases, where the older approved methods of clinical observation are found lacking, the Wassermann reaction gives us a clear picture of the situation present; for one can diagnose syphilis even before (in primary syphilis) or after (in latent cases) any symptoms of syphilis are visible; even in cases where the spirochæta is negative.

“*Second.*—One can form in numerous cases a distinct idea whether or not the symptomatic treatment, heretofore carried out, is sufficient or not. (This latter point, I will elucidate later on.)

“*Third.*—One finds in a conspicuously large number of internal diseases syphilis in cases where nothing points to it, and thereby gains a basis for therapy.

“*Fourth.*—The positive reaction means still ex-

isting syphilis, and the subsequent repeated negative reactions are valuable as to the favorable aspect of the case.

“*Fifth.*—The Wassermann reaction gives the physician, in many cases, a sound foundation for his therapy, which goes far beyond what we heretofore could reach in spite of the most diligent clinical observation.

“*Sixth.*—It would be folly if we should propose to entirely rely upon the outcome of the Wassermann *only* in our actions and medical advice, but it would be still greater injustice if one should not avail himself of the immense advantage of the reaction, offered to the physician as well as to the patient, simply because the method to-day has not yet given us in every case a complete surety as to the *pro* and *contra*.

“*Seventh.*—To waive the use of the Wassermann test would mean to me the same as if I would undertake to diagnose gonorrhea without microscopical examination of the secretions.”

Influence of Specific Treatment on Wassermann Test.—*Dr. Purckhauer*, from the Klinik Neisser, in Breslau, made observations as to the *effect of therapy upon the outcome of the Wassermann test*. For his deductions 5,200 cases form the immense basis. He calls the test positive only when there is *complete* complement binding with the absolute absence of any hæmolysis.

He could not find any decisive influence upon the

reaction to be ascribed to the *form of the individual treatment*. As a *good* antiluetic treatment he classes:

- (1.) 10 c. c. of a 10% calomel suspension, or
- (2.) 15 c. c. of a 10% mercury salicylate suspension, or
- (3.) 2 c. c. of a 40% mercury oil, or
- (4.) 30 to 40 c. c. of 3% mercury bichloride injections, or
- (5.) 30 to 40 inunctions of 4 to 5 gram unguentum hydrargyrii *pro die*.

After repeated courses of treatment, there was a *decrease of the positive reactions and a continual increase of the negative reactions, in proportion to the number of courses*.

After the application of 6 courses (each course consists of 4 to 6 weeks), he obtained only negative reactions.

After a *chronic intermittent treatment*, carried out thoroughly and energetically with insoluble mercury salts, the reaction in the late stages became much more often negative, and thus the prognosis as to a final cure grew much better.

The immediate influence upon the reaction, by specific measures, can be seen beyond any doubt in the cases of *EARLY* syphilis. In these cases, which all gave a positive reaction *before the treatment*, 35% *remained positive even after treatment*; 65%, *however, gave a negative reaction after treatment*.

Entirely different were the results attained in

TERTIARY syphilis. Of all the positive cases before treatment, 87% remained positive even after treatment, while *only* 13% *became negative*. He concludes that our means of treating syphilis (mercury, atoxyl, potassium iodide) seem to work in these cases only symptomatically, without being able to annihilate evidently all of the spirochæta ("recidiv-stäme").

In the LATENT cases, the reaction apparently is more easily influenced in the *earlier* period than in the *late* period. The dosage of mercury or arsenic by which means a change in the reaction is brought about varies greatly with the individual. So, for instance, he found in some of his cases the reaction turn negative after a few injections, in cases even where the syphilitic symptoms at the time of the negative reaction *had not yet disappeared*, while this change of the reaction in other cases was attained only after very energetic mercury and atoxyl treatment.

He found further that:

First.—In the cases where there was a reappearance of symptoms, the Wassermann reaction became positive, too, though it may have been negative before the symptoms appeared.

Second.—*The more thoroughly the latent syphilitics are treated, the oftener they give a negative reaction.*

Taking all these facts together we see an unmistakable influence of the therapy upon the positive

reaction. It would be, however, *premature* to make any deductions as to the *stability of the negative reaction once attained*; in other words, to make any deductions as to the *prognosis of the disease*, for we find that *the majority of the positive reactions* found in the tertiary stage with manifest as well as latent cases *remain positive*, in spite of most thorough treatment.

Lesser found that 23 cases, which gave a positive Wassermann, after an energetic mercury and iodide treatment, gave a *negative* Wassermann.

Citron found that out of 58 syphilitics with positive Wassermann test, 27 after the treatment gave a negative reaction, while 17 gave a partial positive reaction only.

Fischer found that out of 69 cases with the positive Wassermann reaction in *primary* as well as *secondary* syphilis, after the treatment, 30 gave a negative reaction, while 11 gave a partial positive reaction only. In his *tertiary* cases, *the reaction remained always positive*, even after treatment. Of his 10 latent cases, only 2 gave a negative reaction after treatment.

Bering reported 147 cases of *latent* syphilis in which he made the Wassermann test. There were 70 among them which were *treated symptomatically*; 52 of this number still gave a positive reaction. There were 69 cases which were treated on the *chronic intermittent plan*; of this number 58 gave a negative reaction. There were 8 cases entirely un-

treated, of which seven gave a positive and one a negative reaction.

The following is the chart showing the diagnosis in the 26 cases above mentioned, out of which in 21 a Wassermann test was made, the bacteriologist not having any knowledge at all of the diagnosis made. The Wassermann proved positive in 19 of those tests, while it was negative only in two; *one*, a case of meningitis spinalis lumbalis, which had been treated with iodide up to the time the test was made; the *other*, the case of bilateral hydrothorax, referred to as case No. 7, after the patient had been subjected repeatedly to specific treatment. These two instances simply corroborate the statement made by many other authors, claiming the *influence of specific treatment on the outcome of the Wassermann test*. On the other hand, however, I may refer to two patients, cases 25 and 26, husband and wife, who after 4 years of *incessant* specific treatment, while not *showing any clinical signs of syphilis for the last 2 years, still gave a positive Wassermann test*.

NUMBER OF CASES.	DIAGNOSIS.	NUMBER OF CASES TESTED.	WASSERMANN.	
			<i>Posi- tive.</i>	<i>Nega- tive.</i>
6	Brain Syphilis...	3	3	..
2	Meningitis spi- nalis lumbalis..	2	1	1
8	Latent Syphilis ..	8	8	..

NUMBER OF CASES.	DIAGNOSIS.	NUMBER OF CASES TESTED.	WASSERMANN.	
			<i>Posi- tive.</i>	<i>Nega- tive.</i>
1	Congenital Syph- ilis	1	1	..
1	Diabetes	1	1	..
1	Pernicious Anæ- mia	1	1	..
1	Hydrothorax	1	..	1
2	Heart Syphilis...	1	1	..
3	Liver, Kidney Syphilis	2	2	..
1	Rectal Ulcer.....	1	1	..

In this connection may be mentioned the interesting finding of *Donath*, who, in a number of cases suspected of syphilis, but giving a negative reaction, transformed a negative into a positive response by a week's treatment of 12g. mercury ointment. This he calls "provocatory mercurial treatment."

General Conclusions Concerning Therapy.

These above-mentioned facts prove *beyond any doubt the advantage of the chronic intermittent treatment over the symptomatic treatment.* In every case it ought to be our duty to try to turn the positive reaction into a negative one, but nobody should undertake to claim that a syphilitic is cured because his positive reaction has turned into a nega-

tive one, *after one course of treatment only*. One should start with the treatment as early as possible, even before the reaction turns positive. The mere fact that we find *spirochæta pallida* in the initial lesion should prompt us to immediately *excise the latter and institute general treatment*; for we know to-day that the *negative Wassermann reaction*, which we find in most cases of *first incubation*, by chronic intermittent treatment, *can remain negative permanently*, and this is really *the ideal of syphilis treatment*.

The one objection which so many authors had against an *abortive treatment of syphilis* was that in many of those cases the virus has already entered the organism, and is bound to produce effects sooner or later, usually later. To-day, however, in 90% of our cases we can find out by means of the Wassermann test whether or not the *spirochæta* has entered the body, and thus know exactly whether or not with the excision of the initial lesion we have destroyed all the *spirochæta* or not.

We should continue to treat the syphilis in the early stages *very energetically*, so that in *repeated* blood tests the Wassermann test remains negative — *one test only cannot be considered*.

It seems that with energetic treatment, instituted in the first month and year of the disease, one *can accomplish with certain safety a cure*, while the chances of a cure grow less after the ill-treated infection has settled firmly in the organism. We

must add that *we are not justified in forcing anti-syphilitic treatment ad infinitum*, if the positive Wassermann, in spite of mercury, arsacotin, etc., does not turn into a negative Wassermann. We are, however, justified in these cases in prolonging the plan of treatment beyond the average length of time.

Blumenthal and Roscher reach about the same conclusions.

The immense value of the Wassermann test cannot be lessened by the fact that it does not prove positive in every case known to be syphilis. Should not one avail himself of the Widal reaction, just because it sometimes is positive in icterus and negative in typhoid? The paramount importance of the test for the diagnosis of typhoid fever is certainly admitted, and by the same reason one cannot deny the clinical usefulness of the Wassermann test for syphilis.



PART II.

**SPECIAL PATHOLOGY, SYMPTOMATOLOGY
AND DIFFERENTIAL DIAGNOSIS, ILLUSTRATED WITH CASES.**

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CHAPTER I.

THE BRAIN.

The *cortex*, as well as the base of the brain, forms the localization for syphilitic processes far oftener than does the substance of the brain itself. On the cortex we find affected mostly the *psychomotor region*, which contains the centers for the motility of the extremities, the facial muscles, and speech, while at the base of the brain we find the *interpeduncular space* and its surroundings to be the seat of the disease in most cases.

Thus, we explain, on the one hand, the *group pareses* and so-called *monoplegias* we find in the extremities in cases of brain syphilis. Furthermore, the motor aphasia, the Jacksonian epilepsy. On the other hand, we find in cases of basilar syphilis paralysis of the eye muscles, especially of the oculomotorius and abducens, again showing "well confined character," like, for instance, the isolated paralysis of the levator palpebræ superioris (causing *ptosis*), or the paralysis of the facial nerve.

The cortical, as well as the basal process can produce the picture of a *hemiplegia*; in the latter case often combined with paralysis of one or more brain nerves. Very peculiar for brain syphilis

is the fact that, after suddenly appearing stormy brain symptoms of a diffuse character, which impress one very much like meningitis, there remain so-called "*herd symptom*" ("focal symptoms") of cortical or basilar origin, like ptosis, or involvement of certain muscular groups of the extremities, or aphasia. In the beginning, these symptoms are of a *transitory* character only, lasting sometimes a few minutes, for a time coming and going with or without treatment. *This bizarre appearance is peculiar to brain syphilis.* The anamnesis or the residua of syphilitic disease will form an important support for the diagnosis. The Wassermann reaction certainly is not to be neglected. The success of the treatment with iodides and mercury corroborates the diagnosis of the syphilitic nature of the disease.

The frequency of brain syphilis among the better classes in France and Russia is conspicuous, while in less civilized countries, where syphilis reigns endemically, causing terrible destruction of skin, mucous lining, and bones, syphilis of the central nervous system does not appear frequently. It is furthermore proven, beyond doubt, that nerve complications appear more frequently in cases of untreated or ill-treated syphilis, while at the same time we must admit that even the most thorough treatment of syphilis (as far as we could treat thoroughly before we could control the success of treatment by the Wassermann reaction) does not offer

a protection against nerve complications. The idea that nerve syphilis is one of the late localizations of the disease is wrong, for it may appear in the first two years after infection, and Naunyn claims this to be the fact in 25% of his syphilitic nervous cases. They are usually all caused by endarteritis syphilitica, while the formation of gummata belongs to a later period.

Tabes and *progressive paralysis* are syphilitic diseases, the former having been proven by the Wassermann reaction to be of syphilitic origin in from 50 to 75% of cases, while the latter in 100% of cases.

PATHOLOGY.

As to the pathology of brain syphilis, we find:

I. *Gummatous processes* of the skull-bones, spreading to the meninges and the brain, or causing symptoms by the formation of exostoses.

II. The *meninges* are affected either by the hyperplastic-fibrous form (especially the dura) or by the gummatous form; the latter can be *diffuse* at the base as well as at the cortex of the brain and then represents irregular spots of yellowish- or grayish-red color and gelatinous consistency, or it may be *circumscribed*. The latter we find especially at the base of the brain, in the vicinity of the brain arteries. Both kinds of gummata spread usually to the brain surface, with which they form adhesions.

III. The *brain arteries* are subject to endarteritis

syphilitica (Heubner's) and change from the normal tender, tape-like form of transparent appearance into tough, round, white strands. Involvement of these arteries, being endarteries, must needs cause necrosis of the brain district they supply.

IV. The *brain itself* is affected either *primarily* by gummatous formations at times, of considerable size, or, which is more frequently the case, *secondarily* by meningeal disease and endarteritis.

V. The *brain nerves* may be infiltrated through basal gummatous meningitis and destroyed by pressure-atrophy or suffer with a genuine neuritis. Most frequently we find affected the *chiasma* and the *interpeduncular space*, which means: the optic nerve, the oculo motor. Less often we find affected the trigeminus, facial and abducens; very rarely the trochlear, glossopharynge, vagus, spinal accessory, and hypoglossal nerves.

SYMPTOMATOLOGY.

As in all other brain diseases, we have to distinguish between *focal* symptoms and *diffuse* symptoms.

Corresponding to the main seat of the cortical syphilis in the central gyri, we encounter most frequently combinations of monoplegias of the facial muscles and arm muscles, or of the arm and leg muscles. They are not complete paralyses, but paralyses confined to certain *muscle groups*, coming on *slowly*, in accord with the *slow development*

of the gummatous encephalomeningitis (the hemiplegia, which sets in *suddenly*, is rarely caused by syphilis!). Paræsthesias are frequent, as is Jacksonian epilepsy, which latter symptom is often the immediate forerunner of monoplegia, apparently appearing without disturbance of consciousness. Frequently, we find in cortical syphilis *transitory motoric aphasia*.

The basilar syphilis involves mostly the nerves of the apparatus of vision. In the cases where the optic nerve is involved, we find amblyopia, amaurosis, frequently hemianopsia, circular or wedge-shaped scotoma.

The most frequent of these symptoms is the *hemianopsia*, which is called "homonymous" if both left or both right halves of the field of vision are lost, or is called "heteronymous" if *both external or both medial halves of the field of vision* are lost. The latter one, owing to the peculiar localization of the gummatous process, is well nigh *pathognomonic of syphilis* and usually *temporal*.

Characteristic of the syphilitic amblyopia is the fact that it appears often *on one side only*, and completely disappears by antisiphilitic therapy, which certainly could not be claimed of the other forms of optic atrophy.

It is characteristic of basilar syphilis to find *bilateral paralysis of certain nerves, or crossed hemiplegias*. The latter are caused by one and the same gummatous formation, attacking the cranial

nerve in its peripheral course and the nerve trunks for the extremities *above* their crossing in the peduncle or pons. Especially do we find the *paralysis of the oculomotor, abducens, and facial, combined with paralysis of the extremity of the other side.*

The functional disturbances confine themselves usually to a few branches only, so, for instance, is *ptosis one of the most frequent symptoms of the partial paralysis.*

Whenever we see ptosis, we think first of brain syphilis!

Three-fourths of all oculomotor paralyses are of syphilitic origin.

The abducens is less often attacked than the optic or oculomotor, but more frequently than the rest of the cranial nerves, and shows itself in the paresis of the external rectus muscle.

In a case of *facial paralysis* we have to discern between "*central*" and "*peripheral*"; the latter always involves *the entire* half of the face, while the former (a lesion in the lower part of the anterior central gyrus) involves, in most instances, both lower branches of the facial, *not attacking the frontal branch at all.* For the differential diagnosis of these two forms of paralysis it is of importance to know that with the "*central*" type there are not present any trophic or sensory disturbances, while with the peripheral form we often find muscle atrophy and disturbances of taste. Furthermore, with the central paralysis the reflexes are not ab-

sent, which means that the mimic motions of the facial muscles are retained, while with the peripheral form, they are absent.

Whenever we find a total facial paralysis on the side of the disease, combined with the paralysis of the extremity of the opposite side, we call this *Gubler's symptom-complex*.

If the *cerebral peduncle* is affected by a necrotic focus, as a consequence of the syphilitic endarteritis, we find usually the so-called *Weber's hemiplegia* present. That means, we find a peripheral oculomotor paralysis combined with the paralysis of the extremity of the other side.

If the pons is affected, we find *Leyden's hemiplegia*, which means paralysis of the trigeminus or abducens combined with extremity paralysis of the opposite side.

If the onset and course of the paralysis is slow, if the brain nerves are being attacked in succession, if the paralysis is a peripheral one, we must think of a *gummatous meningitis*. If, however, the attack is stormy and severe symptoms appear simultaneously, not in succession, we must think of necrosis, induced by endarteritis.

The other brain nerves, as said before, are rarely involved. If the hypoglossal and glossopharyngeal nerves are attacked, we find disturbances in speech. If the vagus is attacked we find certain spells of dyspnoea, Cheyne-Stokes respiration, cyanosis, paroxysmal tachycardia.

Additionally, I wish to mention that the luetic brain diseases are usually localized on the surface, either of the convexity or base of the brain, very rarely in the brain substance itself.

I wish to mention, too, that the antisymphilitic treatment is powerless against the conditions *subsequent* to the endarteritis.

Besides these *focal* symptoms we have mentioned heretofore, we must be aware of the *diffuse* symptoms of brain syphilis, which usually appear as initial symptoms, and may be classed as (a) *Cerebrasthenic*: headaches, especially *nocturnal*, with morning remissions, obstinate insomnia, ethical defects, which latter sometimes remind one of the initial state of progressive paralysis; (b) *Meningeal*: vomiting, drowsiness, coma, furious delirium, stupor, intermingled with moments of rest and clear mind, during which the patient recognizes his surroundings, answers questions put to him, and takes nourishment; (c) *Psychic*: melancholia, irritability, apathy, decreasing memory, indifference toward surroundings, moodiness, brutality, disturbances of speech and writing.

In contrast to the incurability of the anatomic changes produced by syphilitic endarteritis, the *curableness of the syphilitic psychoses by antiluetic treatment is beyond doubt*.

CASE 1.

Mr. B., married. Bookkeeper.

About 50 years of age.

May 23rd, 1904.

Last night took very sick with vomiting; cramps in the muscles of the neck, and trismus, with foam coming to his mouth; unconsciousness. Spent a restless night. Had several such spells of one-half to one hour's duration. The only cause, his relatives assume, is the heat, to which patient was exposed during the day. *Pulse: Very irregular; high tension; hard and full. Fever as per enclosed chart.* (See page 68.)

Treatment.—Ice bag on head and neck; ice cold enema followed by one pint salt water; alcohol rub; ice water to drink. Injection brought a black stool, partly formed.

Urine.—Amber; clear; acid; 1025; no serum,—no nucleo—albumin; sugar: positive (Trommer, Nylander, Fisher); no bile; no indican; urea: 1%. Sediment: 1% brick; excessive uric acid in form of rhombi, grindstones in clusters.

9 P. M.—Tongue moist. *Pulse:* 120; very irregular; unequal; intermittent. *Respiration:* 24. *Temperature:* 98.2. Very restless, but more rational. Bowels moved once in the morning; once in the afternoon, but profusely. Vomited after injection.

Treatment.—The same, besides strophanthus, 10

drops, four times a day. Ergot and bromvalerian.

May 24th.

10 A. M.—Patient complains of violent *pains in head and neck*. *Pulse*: Very irregular; unequal; 76. Perfectly conscious. *Respiration*: 16.

Treatment.—Sodium bicarbonate, three teaspoonfuls by mouth; two teaspoonfuls by enema.

May 25th.

10 A. M.—*While conscious*, patient admitted that four or five years ago he had a hard chancre which for a long time did not heal. *Both inguinal glands hard and swollen*. No skin eruption, however. Temperature last night went up to 101. This morning, 101. *Pulse*: 72; intermittent; unequal. *Pupils*: Normal reaction. *Respiration*: 18. Excessive headache.

Evening.—Headache unchanged. Temperature: 101½. *Pulse*: 80; regular; full; good tension. Tongue moist and coated.

Treatment.—Iodides continued; *calomel* 0,05 four times a day; ice bag.

May 26th.

10 A. M.—*Pulse*: 80; regular; very good tension; full. *Spleen*: Not enlarged. Temperature: 101. *Furious headaches*. Good bowel movement.

10 P. M.—*Temperature*: 101.8. *Furious head-*

aches. Sensitiveness of sacrum to pressure. Tongue: Thickly white coated. More restless.

Treatment.—Lactophenin 0,5, three times a day.

May 27th.

6 P. M.—Patient still complains of backache. The nates and scapulæ show maculous erythema. Spleen: Not palpable. No papulæ. Tongue moist and coated. Pupils reacting. *Pulse:* 80; regular; full; good tension. *Temperature:* 100.6. Has taken seven doses lactophenin in twenty-four hours. Somewhat delirious at times, but feels better.

Treatment.—Ichthalbin 0,5, five times a day.

May 28th.

9 A. M.—Still headache. Ordered castor oil.

10 P. M.—*Temperature:* 101.2. *Pulse:* 100; regular. Patient is more rational.

May 29th.

9 A. M.—Patient still complains of excessive frontal headaches. Tongue white coated. No bowel movement for 86 hours. *Pulse:* 92; regular; full. *Temperature:* 100.4.

May 30th.

Temperature: 101. *Pulse:* 92, full; regular. Headache continues,

May 31st.

Temperature: 102. Headache lessened. *Pulse:* 96; regular; full. Somewhat sensitive in the region of the liver; the latter not palpable; neither the spleen. Constipated. Tongue: White coated and dry. Lips: Dry.

June 1st.

Last night, after feeling fairly well, he *suddenly lost his speech and could not move*. His pulse was 120 and quick to the touch. His limbs trembled. Soon he grew better, but was sleepless until 5 A. M. Then, after a short sleep, he woke up. Has felt drowsy since. *Cannot open his mouth*. Understands, however, the people around him.

I found at 8 A. M.: *Temperature:* 101. *Respiration:* 20. *Pulse:* 110, regular; full; normal tension. Tremors and clonic spasms alternating in his fingers, forearms and lower lip. Every once in a while trismus. Unable to stick out his tongue, although being asked repeatedly to do so. *Cannot swallow well*. Pupils do not react to light. Corneal reflexes very excessive. Stupor. Answers questions only occasionally.

Treatment.—Enema of ice water; hypodermic injection of mercury bichloride 0.02.

Evening.—Patient started immediately after the injection of bichloride to speak slowly. Swallows better. Can stick out his tongue. Has no spasms.

Smells well, but *does not hear as well as before*. Peculiar *deep respiration*, periodically the respiration ceases. Pupils react to light very slowly. Field of vision apparently not narrowed.

Temperature: 100.6. Pulse: 92; full; regular tension. Respiration: 20.

June 2nd.

Morning—*Left pupil wide; right narrow*; both rigid to light and accommodation. Patient passed urine involuntarily last night and to-day. Talks well again, but is more delirious.

June 3rd.

Patient passed urine involuntarily. At times he cannot open his mouth. Does not stick out his tongue except very rarely when asked to do so by the physician or the nurse. Left pupil much larger than the right one; *the left rigid; the right slowly reacting to light*. The right hand in tonic ulnar and palmar flexion. *Opisthotonus* since this morning. *Patellar reflexes absent*. Skin and sole reflex exaggerated.

Treatment.—*Hypodermic injection of mercury bichloride* 0.01 into the side of the thorax.

10 P.M.—Typical Cheyne-Stokes respiration. Pulse: 100; regular; normal tension and volume. Temperature: 102. Was all the afternoon more vivacious and took part in the conversation. Sticks

out tongue when asked. Urinated involuntarily; but once, this morning, he could hold urine.

June 4th.

9 A. M.—Patient spent a good night. *Speech* perfectly clear. Does *not complain* as bitterly of his *headache*. Sticks out his tongue which is still coated. Is somewhat salivated. Left pupil rigid; right pupil narrow but slowly reacting to light. Moves his eyeballs in all directions. Sees with both eyes. Opisthotonus lessened. Could hold his urine very well.

Treatment.—*Hypodermic injection of mercury bichloride 0.01.*

10 P. M.—Patient has remained clear minded all day. Recognized everybody around him. Did not pass urine involuntarily. Does *not* complain much of *headache*, but holds his hands on his head and frequently a tremor like a cold shiver passes through his whole body.

Consultation held with Dr. G. corroborates the diagnosis of cerebral syphilis, and agrees on the treatment.

June 5th.

Patient does not recollect what he had for breakfast, and talks nonsense. When asked what 6×7 is, he answers 42, which he could not do the day before.

Left pupil rigid and wide; right pupil narrow and rigid. Holds the urine well and slept well. He

looks thinner in the face. Last hypodermic shows necrosis of skin.

June 6th.

Left pupil wide and rigid; right pupil narrow and rigid. Pulse and respiration normal. Patient does not know how much 7×8 is, nor can he divide. Bladder control good. Temperature: 99.8. Tongue not as thickly coated.

June 7th.

Patient complains of the hypodermic injection places. *Right patella shows a slight reflex.* The left patellar reflex absent. Pupils the same. The gums normal.

Treatment.—*Regular inunction treatment with gray ointment.*

June 8th.

Pupils not changed. Patient can multiply only by being aided.

June 9th.

Left pupil not as large as before, but rigid; right pupil narrow but reacting somewhat. Patellar reflex absent. Patient is very talkative. Heel walk. Rhomberg positive. Temperature: 99.

June 10th.

Patient complains this morning again of *headache over the left parietal bone*. Temperature: 100 to 101. *Pulse*: 104. The places of injection on the side of his thorax are painful and turn necrotic. Treatment the same.

June 11th.

Temperature: 98. *Pulse*: 104; tension somewhat lessened. *Respiration*: 18. Patient knows how to multiply, divide, and subtract, though with some difficulty. *Right pupil* narrow, but *reacting to light*; left pupil wide and rigid. Patient wakened in the morning with a dull headache.

June 13th.

Patellar reflexes plain on the *right* side; very slow on the left side. *Pupils*: Left, not as large; *somewhat reacting*. *Right*, narrow; *reacting*. Patient knows how to multiply, divide, add, and subtract.

June 14th.

Patient looks intelligently and speaks rationally. *Pupils* the same. *Treatment*: The same. Podo-phyllin pills.

June 16th.

Patient did not sleep very well. Has gluttonous appetite. Somewhat constipated. Left pupil larger

than the right one; *both rigid* to light. On covering the right pupil, left enlarges; on uncovering the right pupil, left narrows. Left patellar reflex normal; right patellar reflex slow.

June 20th.

Right pupil reacting somewhat to light. Left pupil rigid. *Patellar reflexes both present*, but very slow. Mind clear.

June 22nd.

Patient allowed out of house. Gingivitis. Potassium chloride—gargle after meals; mouth toilet forced.

June 25th.

Patient complains of bad smell from the mouth. Does not enjoy food.

June 28th.

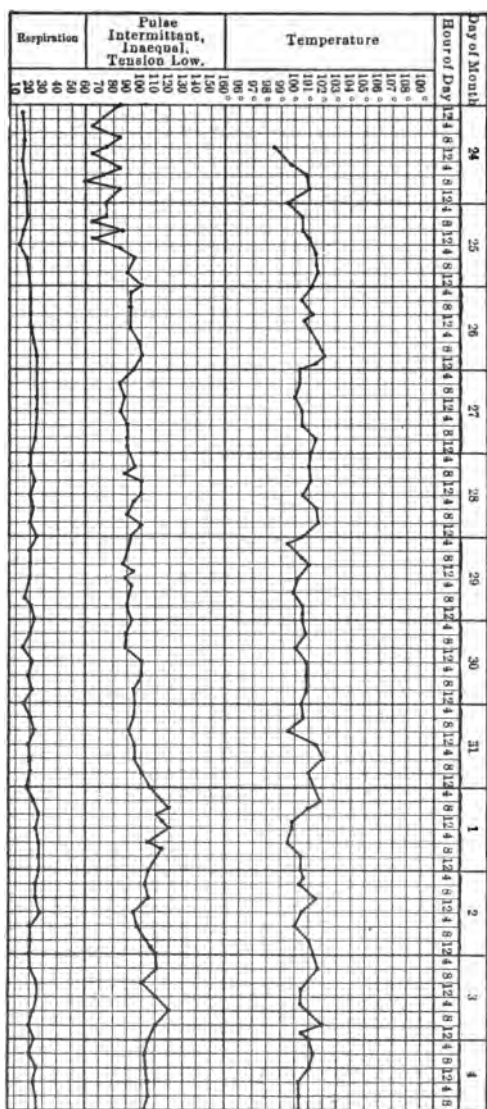
Patient complains of headache, loss of appetite, constipation, violent *shooting pains* in muscles of the knees, as well as arms, *at night*. Tongue somewhat coated. Pulse: 104; regular.

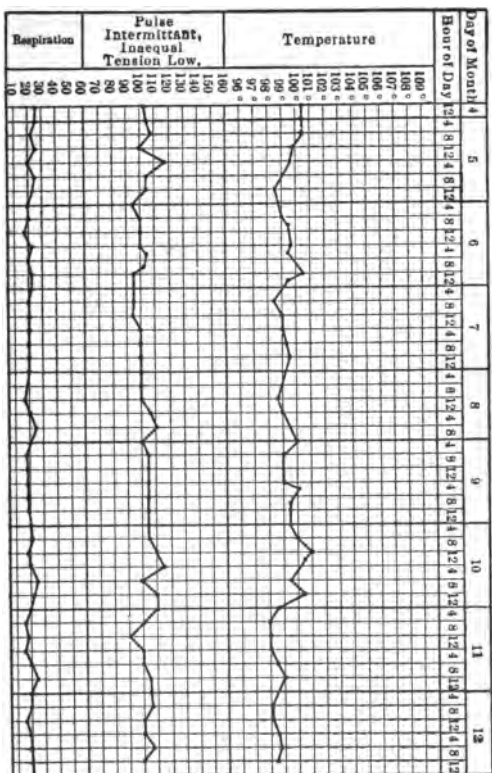
Right pupil reacting to light; left pupil wide, rigid. *Patellar reflexes: Right better* than left.

Treatment.—Iodides resumed; inunction treatment lessened to half the doses.

May 1904

June





July 1st.

Patient had excessive pain in rectum on evacuation. Shows an anal fissure. Appetite bad; gingivitis. Inunction treatment ceased.

July 15th.

The fissure is cured. *Pupils* both of equal size, moderately wide; *reacting very slowly*. *Patellæ both equally positive*. Rhomberg: Negative. No headache. Sleeps well. Appetite good. Gingivæ good. Bowels move every day. Can take long walks. Reads two newspapers every day.

Treatment.—Kalium iodide 45,0 in 150,0 water, three teaspoonfuls a day.

August 12th.

Patient has been working as *bookkeeper* for the last three days. Gets tired easily, though. Appetite and bowels: Normal. *Pupils* middle-sized, *reacting both to light and accommodation*. *Patellæ both normal*.

CASE 2.

F. M. B.

35 years of age.

For the last three weeks has been complaining of general malaise, *nocturnal* headache along left occipital nerve, *seeing double* when looking to the left or right. This morning the eyelids very swollen.

Status.—Periodic paralysis of the left and right abducens. Patellar and pupillary reflexes: Normal.

Five years ago specific infection, followed by inunction treatment.

Urine.—Amber; clear; acid; 1023; traces albumin; no sugar; a few leucocytes; a few squamous epithelia.

Treatment.—Kalium iodide 15,00: 150 aqua.

June 11th.

Patient complains again of considerable headache. Conjunctivitis. Still seeing double. Temperature: 101.

Treatment.—Ung. Hydrargyr. 4,0 for inunction every day. Kal. Chlor. for gargle.

June 12th.

10 P. M.—Patient complained of considerable headache from seven to nine P. M. Temperature: 101.3, starting with chills. Edema of the eyelids. Eyeballs bulging. Both conjunctivæ considerably reddened and swollen.

Treatment.—The same; eye drops consisting of adrenalin and zinc sulphate.

June 13th.

Temperature: 102. Conjunctivæ and face edematous. Less diplopia.

June 14th.

Temperature: 99 to 102. Pulse: 100. Headache lessened. No diplopia. Edema not changed. Lungs, heart, spleen: Nothing abnormal.

June 15th.

Temperature: 98 to 101.8. Dull headache, not as severe as before. Conjunctivæ less swollen. Sees double only when looking to the extreme left side.

June 16th.

Had no headache to-day. Temperature: 99 to 101.8. Feels very weak.

June 17th.

Temperature: 102.3 at six P. M. Was somewhat delirious at that time. Pulse: 96, regular, full. After the fever patient always breaks out in profuse perspiration. Does not eat much.

June 19th.

Temperature last night and the night before did not go lower than 100, and reaches 102 every

evening. Feels very weak, and does not eat anything. *Spleen* is easily palpable. Tongue: somewhat coated and moist. Does not see double any more. Conjunctivae much improved.

Treatment.—Ichthalbin; quinin 1,5 every morning. Inunction treatment and potassium iodide discontinued.

June 20th.

Temperature: Reached 101 only, after having taken quinin 1,0 in the morning. Pulse: 84. Very little headache. No paresis.

June 21st.

Temperature: 100.7—the highest during the day. No headache. No diplopia. Constipation.

June 22nd.

This afternoon patient experienced sudden spells of weakness, hands and feet turning cold. Lips cyanotic. Pulse very weak. Pulse of right radial hardly perceptible. He said during the spell, "I am going." Pulse: 104; tension rather below normal.

June 23rd.

11:30 A. M.—For the last half hour *speech has been impaired. At times his speech is distinct, at times very indistinct; the latter especially when he intends to speak very loudly. He does better when whis-*

pering. Taking nourishment causes cough, and when he drinks, the liquid regurgitates through his nose.

The *right hand* is *paretic* and cold; pulse of same not perceptible. No headache. No conjunctivitis. No diplopia. Last night he suffered again a spell of great weakness.

Treatment.—Hypodermic injection of 1 c.c. of 1% mercury bichloride.

8 P. M.—Status not changed.

June 24th.

Status: the same. Pulse: 112 to 120. No diplopia. No conjunctivitis. Paresis of the right hand. Speech still indistinct.

June 25th.

Speech still impaired, but swallows better. Temperature reached, during the day, 100.6. On whistling, the *left corner of the mouth is pulled upward. The right side of the face is less movable.* Paresis of the right hand not changed.

Treatment.—Hypodermic injection of 1 c.c. of 1% mercury bichloride.

June 26th.

Temperature: 100. Pulse: 120; every once in a while intermittent. Light diet.

Urine.—(Bottle) Dark amber; slightly turbid; acid; no albumin; no sugar; excessive indican; urea:

1.33%. Sediment: A few leucocytes; moderate cuboidal kidney epithelia; a few squamous epithelia; a few hyalin casts; moderate medium-sized granular casts; one narrow epithelial cast.

June 27th.

Patient had this afternoon coldness of the *right leg*, with slight *paresis*. Speech is better. Swallows better. No diplopia. *Very vivacious*. Pulse: 110 to 120. (His father arrived at his bedside.) *His right hand is stronger*. Highest temperature of the day: 100.

June 28th.

Patient very much excited. Pulse: 112 to 120. Temperature reached 101 again. *He can move the right leg, but the right arm is paretic*. His speech is worse again.

Treatment.—Injection of 1% mercury bichloride.

June 29th.

Speech better. *Right arm*, however, *paretic*. In *laughing*, the *left corner of his mouth is pulled upward*, not the right one. In *talking* the *right halves of his lips remain closed*; the left moving.

July 1st.

Speech is better. Pulse: 106. Right hand and arm still paretic. Was *stuporous* all day.

July 2nd.

Speech pretty good, but patient feels very weak and has *spells of sweating*.

Treatment.—One injection mercury bichloride.

July 3rd.

The right hand is still parietic, though he can lift the right arm toward his head (with difficulty). Legs, speech, eyeballs: normal. *Pulse*: Very often *intermittent*. Temperature: 101. Patient has resumed inunction treatments. Somewhat salivated.

July 4th.

Pulse is intermittent; however, full and good tension; 106. Complains of *coughing spells at night*. Examination of lungs reveals nothing abnormal. The right hand and arm still somewhat parietic. *Pulse*, however, *again distinct*. Speech fairly good. Appetite is poor on account of potassium iodide, as the patient thinks. Temperature in the evening: 100.3.

July 5th.

Pulse: Regular and full; not intermittent. Right hand still weak. Speech, however, good. Temperature: 100 in the evening.

July 6th.

Patient feels very weak.

July 9th.

Patient feels very weak. Speech, eyeballs, tongue: Normal. The hand still somewhat parietic.

July 11th.

Speech, eyes, arm: Normal. Pulse: Good. Temperature: 99 for the last four days.

Treatment.—Injection 1% mercury bichloride 1 c.c.

July 13th.

Patient feels very well. Does not complain of anything. Sleeps well. Has good appetite. Right arm much stronger.

July 29th.

Patient walks about. Pupils react normally. Patellar reflexes normal on both sides. Tendon reflexes of the right arm exaggerated. *Speech* still somewhat nasal. Palate reflex: Normal. Tongue: Normal. No headache. Good appetite.

July 31st.

After having the right arm and the right side of his body massaged, patient could sit up immediately. Sleeps well. Appetite good. Somewhat constipated.

Treatment.—Arsenferratoze with iodides.

August 16th.

Patient is taking salt bath three times a week at the beach. Smokes one cigar a day. Feels well.

August 26th.

Weight, 167 pounds. Left the hospital weighing 125 pounds. Complains of losing his speech when excited. The right arm is stronger than the left one. Complains of folliculitis of scalp.

Treatment.—Arsenferratoze continued; Sodium iodide discontinued for three weeks.

September 28th.

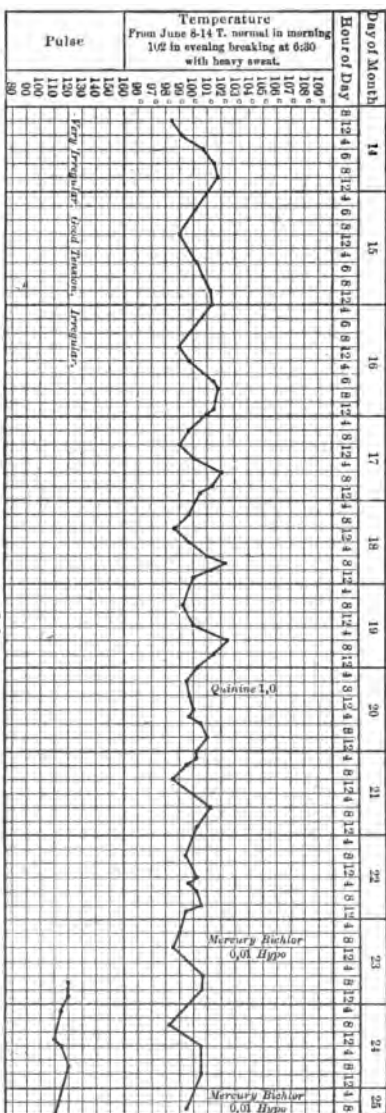
When excited, or after physical effort, patient complains of "*sleepy feeling*" throughout the whole right side of his body, though the strength in the same remains normal.

For the last four days he has *nocturnal headaches*. Appetite, sleep, bowels: normal. *Seborrhœa*: improved.

Urine.—(Passed in office) Light amber; clear; 1015; slightly acid; no albumin; no indican. *Sediment*: A few squamous epithelia and kidney epithelia; nothing else.

Treatment.—Potassium iodide, 20,0 to 150 water.

June



CASE 3.

Mr. W. C. H.

42 years of age.

I was called, *October 9th*, 1909, in consultation by Dr. H. C. Wilson to see the case and the doctor gave me the following history:

“Case treated 15 or 18 years ago; had initial sore, secondary symptoms over course of one year or eighteen months.

“Treated with pil. Hydrarg. protiodide, later mixed treatment pursued for over two years after all symptoms had disappeared. Married and has healthy child twelve years old. Patient had been well all these years; of fairly good habits; rather heavy weight; indulged usually in several drinks of whiskey a day.

August 3rd.

“Was consulted for *severe pain in back of head*; gave aspirin, etc.

August 6th.

“Gave mixed treatment on suspicion. Some relief. Later gave large doses of quinine. Symptoms became alleviated and patient did not return until *October 5th*. Had disturbance in locomotion on arising from the lunch table. I found paralysis of *right internal oblique*, and of *left ext. oblique*. At home symptoms became worse; partial paralysis

developed, improving after 24 hours. These symptoms confined to *left side*.

October 8th.

“In the night complete *paralysis of right side* came on, with the *same side of face* affected.”

I wish to add to the above history that his wife had had no miscarriages. Two years ago the patient suffered with terrible *nocturnal* pains in his neck, *lower and upper jaws*; took iodides. Since yesterday noon *both his eyes turned suddenly to the left*; he walked to the left side; *saw double*. The following night *paralysis of the left arm and left leg* took place, CHANGING SUDDENLY to the *right* over night. *Vomited* continually all night, liquid coming out *through the nose*; the face turned down on the pillow.

Status.

Patient is snoring deeply though perfectly conscious. Right *eyelid paretic*. Paralysis of the eye muscles slight. Left side of the mouth open.

Reflexes: Patellar and plantar normal.

Speech nasal. No deviation of the tongue. Right arm paralyzed. Right leg paretic. On the left side, muscle vigor normal.

Urine.—(Bottle) Amber; turbid; moderately cloudy; acid; faint traces albumin; no sugar; no bile; iodine positive; no pus. Sediment: A few leucocytes; red blood corpuscles absent; a few kidney epithelia; a few squamous epithelia; a few tiny

octaëders of oxal. of lime; some sodium urate globules; moderate mucin.

Treatment.—Iodide of pot. had been given with pil. hydrarg; iodide was increased; inunction instituted, accompanied with hypos. of hg. bich. 0,02 gr. every other day. Treatment continued up to present time. *Improvement has been steady and progressive.*

CASE 4.

Mrs. M. H.

26 years of age.

August 19th, 1909.

Patient was referred to me by the oculist for diagnosis.

Six weeks ago she suffered with considerable pain in her neck; saw all kinds of colors; grew totally blind for six weeks; could not walk through the room; could not recognize anybody. The left eye is better. The top of her head feels as if someone were pulling her hair. The head gives her the sensation as if being drawn backwards. Her jaws feel tired; shoulder and elbow joints pain her, so does her chest. Her menses are regular, but always commence with headaches, though no backache, flowing scantily from three to four days. Bowels move every day. Sometimes palpitation. Four years ago, when she was married, she weighed 165 pounds. To-day she weighs 135. She thinks she was infected by her husband three years ago with

gonorrhœa, when she had burning pain on voiding urine, tenesmus and leucorrhœa. She believes that she still has gonorrhœa. Three years ago she noticed no eruptions on her body. The headaches and sore throat, which she had all her life, seem to be better.

Lungs, heart, liver, spleen: Nothing abnormal.

Pupillary and patellar reflexes: Nothing abnormal.

Kidneys: Not palpable.

Glands: Axillary, neck, and inguinal hardened and enlarged; not so the cubital.

Tonsils: Both show whitish spots one-half the size of a bean.

Uterus: Sinistroversus, adhering at its left cornu.

(Patient has complained for some time of pain in the left lower abdominal region, on walking.

Ovaries: Nothing abnormal.

Urine: (Taken by catheter on August 19th) 1,007; alkaline; slightly turbid; marked traces albumin; no pus. Sediment: A few red blood corpuscles; a few leucocytes; no bacteria.

Blood: 80% Sahli, 4,500,000 R. B. C's.

Wassermann test: very positive.

Urethral secretion consists of pus corpuscles; excessive cocci and bacteria; a few coffee-bean-shaped diplococci, intra- and extra-cellular.

Cervical secretion, glassy, consists of numerous bacilli and diplococci and a very few pus corpuscles.

Treatment.—Diet for constipation, Iodoferratose, ichthyol tampons, Burrow's solution for douche.

The week after marriage in May, 1905, the patient complained of burning and itching and *white sores on the genitalia*. Three months later she went to a physician, who diagnosed gonorrhœa. The first year she complained a good deal of itching in her sexual organs, as well as in her armpits, and of rheumatic pains in all her joints. She separated from her husband three months after marrying him.

For six months she had "hives" between her breasts, which appeared for a few days, causing intense itching. The physician claimed it came from the medicine which he prescribed. At the same time she noticed a *pin-head-sized wart on the inside of her left thigh*, which grew very slowly, burning her. It lasted for 6 months, then turned red and sore and disappeared, under itching sensation. Her skin was always clean. In the *spring* of 1906 she had *eruptions on her face like measles, dark red*, and itching, covering the whole face and forehead. To this she attributes the *lentil-sized white scar with pigment at its periphery* on her forehead. The physician thought it came from eating fruit. It disappeared after a few days. She has had no sores since that time in her vagina, on the thighs, or on the rectum. She suffers most of the time with *headache, more at night*, in both temples and pain in the neck. That summer it kept her from sleep-

ing. A year later she suffered with backache.

Eight weeks ago her face broke out scarlet red, at the same time she had terrible pain in her neck and lower jaws (like a toothache) and in both eyes; grew flighty with the headache; passed *sleepless nights with pain*. The headache lasted constantly, day and night, *except for the last week, when she started to take the Iodoferratose*. All those *nights she felt like dying*. At those times she saw with her right eye "a blue spot surrounded by a yellow ring," on each object at which she looked. Sometimes this spot covered the whole face of a person she looked at. Then appeared the following colors in spots, first white, then red, then green, then black, and lasted a day and a night. Then she saw on a light brown background many black spots, which moved around constantly, *even when she covered the right eye*. The last-mentioned *black spots she saw with both eyes, even when she covered them or in the dark*. The above-mentioned "blue spot" she saw only with her right eye and only for three weeks. Before these spots left her she saw everything dark green in front of her. She could not distinguish figures. This condition lasted for six weeks, then it slowly subsided and there remained instead of the blue spot, which she saw with the right eye, only a very black spot, and *she could see nothing with the right eye*. After she began to see with the right eye the *faces seemed to be crooked*, so did the houses, and appeared much bigger and

dark green in color. Glasses did not correct this condition.

Treatment.—Inunction with mercury vasogen, the rest of the treatment continued.

September 7th.

Patient feels better; throat better, has no headaches any more. She had no pain during menstruation. The sore which she had on the right lower lip has disappeared. She sees better; the black spots which she used to see with her right eye, she can notice now at night only, and then they appear ragged. She can read printed matter, which she could not do before. The end joint of the left ring-finger, as well as the ankles and knees, do not cause her rheumatic pain any more.

September 11th.

Patient sees yellow flashes with her right eye. Complains again of pain in her neck at night. The pains in her extremities are leaving her. She complains, however, of pain in the region of the heart. She feels a fluttering there which gives her a peculiar sensation.

September 14th.

Patient complains again of pains in her left abdominal region. Has again spots before the eyes and headaches. Thought that she had some new breaking out in her vagina, which, however, proved

to be nothing but a slight irritation from ichthyol tampons.

September 27th.

Patient complained last week of an itching sensation all over her body, even on the palms of her hands and soles of her feet. She has actually had this itching for the last four years, but it has been much worse for the last week and kept her in agony. With the menstruation it is usually worse. She complains of *pain in the joints, especially in the evening*. However, *she sleeps well at night*. She has aching in both lower jaws radiating into both temples, lips, nasal septum, top of her head, and both sides of her neck. On turning her head she has a peculiar sensation as if something were catching her in her neck. With her left eye she can see well; with her right eye only when keeping the objects quite near, while *before she could not see anything with the right eye*. In distance the lines of the faces she sees are disfigured, looking like funny pictures. With her right eye, she can see my face even at some distance. In the center appears, however, a round green ring.

On the tonsil there appears very plainly a lentil-sized whitish patch. On the inside of her legs she has a few half-dollar-sized suffusions, which came without any cause. She complains of hot flushes and palpitations the last few days. Had no appetite the last few days.

Patellæ: Exaggerated. Pupils: Normal to light.

Urine.—(Passed in office) Acid; traces indigo carmine; amber; turbid; no bile.

The aching which she had for four years on the left large toe and instep, ankle, and tibia, has left her at present on the left foot, but appeared in the right foot. Towards noon, she states, she suffers always with heat and dryness of her lips, persisting all the afternoon. She *perspires at night*. Temperature at 12:30 P.M. (while she is complaining of hot flushes) is 98.4.

October 9th.

Patient feels much better, though she is getting thinner. The itching has disappeared. The aches have left the joints. She can, however, barely bear her weight on the soles and balls of her feet. Her head, while still aching, is much better. While she had pain all the time before, now she suffers only every other evening. She has not much appetite. Her throat feels much better. When she woke up this morning, she noticed on the wall the form of the back of a skull covered with snow white points. She sleeps better and does not dream so vividly. Sometimes, after 6 o'clock in the evening, she has a sensation as if she would die. She has not as many hot flushes as before.

October 23rd.

Patient feels much better. Every time on lying down or getting up she has a sensation of falling, with peculiar sensations radiating from the occiput into her skull, lasting for one or two minutes, without nausea. With the right eye she cannot read yet or recognize people very well. The left eye is good. *The auriculae and the alae nasi feel sore and raw.* Last night she could hardly move her shoulder on account of soreness; the same happened in the right thigh; palms of the hands, and soles of the feet, sometimes turn sore and itching. The pain which has been in the dorsum of her left foot for four years has disappeared. The balls of her feet are painless; the ends of the toes still itch. *Has no headache any more.* Sleeps well. Wakes up sometimes in the night without knowing her whereabouts for awhile. After having had that blind spell in June, she could not move her head for many months without getting pain in her neck. This has now disappeared. Three years ago, on account of pain in her teeth, she had all her upper teeth extracted. The pain, however, lasted for two months afterwards in the upper jaw.

Patellar reflex: Both exaggerated. Pupils: *Left*, prompt; *right*, tardy.

She says the urine is thick and green. Her menstrual flow more profuse and less painful than at any time in the last four years.

October 29th.

A week ago, when she lay down, she was seized with a numb sensation in the back of her neck, radiating to the top of her head; for the last two days spreading into the face and into both upper lips; not, however, into the lower jaws. She hardly wants to open her eyes when this sensation comes over her, *especially in the evening*. This evening she noticed that she could see with the right eye nearly as well as with the left. When she woke up this morning her face, her hands, and her neck were "blue." Needle prick on the forehead is not felt as distinctly as on the upper jaws.

Pupillary- and patellar-reflexes: Normal.

For the last two days she has had considerable pain in the first interosseal space of the left hand, and *soreness* in both shoulders and right elbow, right hip, right thigh, *especially towards morning*. She has *no nausea*, though having had it for the last four years.

On August 7, 1909, Dr. DeWitt Connell made the following report on Mrs. H's case:

Patient complained of very poor vision in right eye; first noticed poor vision about 6 weeks previous, at which time she had a severe pain in her head. Upon examination vision found to be very defective. Patient unable to read large test type at distance of 20 feet.

The only apparent change in the eye is found by

use of the ophthalmoscope, and consists of a lesion in the region of macula lutea. This lesion is about $\frac{1}{6}$ the size of the disc, and is formed by an atrophy of retina with migration of pigment. The pigmentation is not dense but "pepper sprinkled" in appearance.

Vitreous cloudy, and pupillary and retinal vessels hazy, the veins being rather swollen.

CASE 5.

Mrs. D. S.

49 years of age.

July 9th, 1907.

Weight 210 pounds, $5\frac{1}{2}$ feet tall. Fifteen months ago, after the earthquake in San Francisco, patient suffered with a spell of paralysis of the legs and right arm. Towards evening, there came a spell in which she could not speak or see. After one hour the speech was still somewhat impaired. at night she wanted to get out of bed, and fell on the floor. Next day she still could use the arm, but the day following, her arm and leg were completely paralyzed. She *could not* read very well, *everything was blurred*. Potassium iodide made her very languid. For the last 4 months she took massage treatment, which helped her considerably, as she could not have used the arm before as she does now. Her voice and throat seem to close up, and she has *difficulty in pronouncing words*. Very often she had a *hoarse voice*. She has two children,

30 and 27 years old respectively; no other children, but has had *frequent miscarriages*, some of which were artificial, others spontaneous. A month before she was paralyzed, her menstruation stopped. At present she gets hot flushes and spells of perspiration. She had some fainting spells lately. They were actually only "weak" spells. *Thirty years ago her husband, who was a very immoderate man, had a specific infection, and nine years later, at the age of thirty-seven years, died in the asylum from softening of the brain.* She has been constipated all her life; regurgitates her food 2 to 3 hours after meals. *She cannot pronounce words as well as she did 6 months ago.*

Status: Lungs, heart, liver: Normal. Pulse: 84. *Tonometer:* 185. Uterus, ovaries: Normal. *Patellæ:* Right, exaggerated; left, normal. *Muscle reflexes:* On right extremities exaggerated; *right levator palpebræ paretic.* *Tongue:* Deviation to the right. Right arm somewhat paretic, as well as the right leg.

Urine.—(By catheter) Amber; clear; acid; slight traces albumin; no sugar; moderate indican; urea 1%. *Sediment:* A few leucocytes, a few squamous epithelia.

Treatment.—Diet; massage; oil injections, extractum veratri viridis fluidum, five drops three times a day; Karlsbad in the morning.

August 22nd, 1907.

Weight, 195 pounds; has lost 13 pounds in weight. Patient feels languid. Cannot keep her eyes open. Cannot sleep. Cannot eat on account of lack of appetite. Bowels do not move. She feels very nervous; weak. Her head does not feel right.

Pulse: 88. *Tonometer*: 160 in right radial; 160 in left radial. Patellar reflexes: Right, considerably exaggerated; left, somewhat exaggerated.

Treatment.—Camphor, tincture valerian; Bornyval.

August 28th, 1907.

Weight, 190 pounds. The camphor helped the patient endure the weak spells. She sleeps better. Has no appetite, however, and does not eat well. Has lost 19 pounds altogether. She must urinate 5 to 6 times every night, a few drops each time.

Pulse: 84. *Tonometer*: 160.

Treatment.—Urotropin.

September 9th, 1907.

Patient has gained 3 pounds in weight. The bowels move only after a few days' constipation. The languid feeling does not leave her. Does not have to void urine at night so often.

Pulse: 80; regular. *Tonometer*: 160 on right side; 135 on left side.

Treatment.—Podophyllin, faradic electricity.

September 26th, 1907.

Weight, 188 pounds. Patient complains of considerable pain in the left calf and thigh, as well as in the right ones. She has walked longer distances the last week. Can climb stairs.

October 22nd, 1907.

Weight, 174. Patient has no appetite. Had to take sleeping medicine on account of restlessness, though not having any pain. Her paralysis seems better. She can lift her right leg while walking up-stairs, though not having control over it.

Tonometer: Left, 110; right, 110. Pulse: 80; regular. Tongue: thick, yellowish coat.

January 25th, 1908.

Weight, 180. Patient *pronounces very well. Can write with her right hand.* She is sleepy. Has no bowel movements without irrigation or salts. Tongue somewhat coated.

Pulse: 84. *Tonometer: 142. Patellar reflex on both sides exaggerated.*

Treatment.—Veronal.

June 29th, 1909.

Urine.—(Brought in bottle) Alkaline; marked traces indican; marked traces albumin; no sugar. Sediment: Excessive squamous epithelia; bacteria.

Patient relates that up to 4 months ago she could

very nearly walk alone in the street, then she suffered a nervous collapse. Two months ago patient had pain in her back, just below waist-line. At present: considerable pain in both thighs, and very weak. The lower extremities, from the knees down, are cold. No appetite. Considerable loss in weight. Poor sleep. *Difficult articulation.* No headache. Bowels move only after salts. *Can walk up and down stairs.* The arm perhaps somewhat more stiff. The large joints and the extensor muscles are painful.

Treatment.—Iodides, analgesic balm.

July 15th, 1909.

Patient is very hysterical; *cries easily. Cannot speak well.* Complains of backache and pain in both joints of the large toe. The patellar reflexes are equal on both sides. She cannot very well bend her right knee. She is very constipated. Cannot extend her right elbow, but the clasps of her hands are equal on both sides. *Pupils are tardy on both sides; on the right side somewhat irregularly shaped.* Chest and body covered with acne.

Urine.—(Taken by catheter) 1015; traces albumin; traces bile. Sediment: A few leucocytes; a few squamous epithelia. *Wassermann test positive.*

Heart.—No murmurs; second aortic sound accentuated.

July 19th, 1909.

Patient is put on mercury inunctions; iodides continued.

July 28th, 1909.

Patient had 6 inunctions. Feels an aching all over the body. Headaches; watery eyes; acne, gingivitis. Patellæ: Exaggerated, bilateral. Pupils: *Left, normal; right, tardy.* Tongue considerable yellow coat. Always constipated.

Treatment.—Iodides discontinued; remainder continued.

July 29th, 1909.

Patient complains of considerable pain in head and teeth; is very excitable.

Treatment.—Bromural.

July 31st, 1909.

Patient has had 8 inunctions. Complains of continued backache, especially on getting up in the morning. No headaches. No acne. *Right hand, leg, and arm are not atrophic.* Patellar reflexes equal on both sides.

August 6th, 1909.

Patient has had 13 inunctions. *Feels very well. Can move her right arm better, and in her right little finger she feels "the circulation" entirely different from the way it used to be.* Had a headache yesterday and to-day, perhaps, as she thinks, on account of poor sleep. Sleeps only every other night. She has no backache any more. Her *appetite very*

good. Cascara gives her a bowel movement every day.

CASE 6.

Mr. F. D. Y. Merchant (single). 46 years of age.

May 31st, 1909.

Five feet and 4 inches tall; weight, 143 pounds.

Patient had gonorrhœal infections "quite a few times." About 12 years ago, he acquired hard chancre on the right side of the membrum; the papulous exanthem appeared on the shoulder and forehead. *He did not use any inunction treatment, but took iodides, and, as he thinks, mercury, too, internally, for a few months.* He could not take it continually, as it affected his stomach. The last 5 years he has been run down; had no energy when he came back from Karlsbad Springs. In November, 1908, he was seized with a spell of weakness while working in a store. Slowly he felt *creeping over him a weakness of the left arm and left leg; felt as if he were losing the control over them.* At the same time he felt a dull sensation in the *right* side of his face; could not very well close the right eyelid. The right corner of his mouth was pulled to the left side, the speech was impaired. He grew *restless at night.* Never had headache. He underwent a rest cure, took inunction treatment, went south for a rest. At present he sleeps pretty well; complains of poor appetite, however. The last few

years he has been constipated, and when taking cathartics, he lost control over the stool. Lately he has been able to urinate without difficulty. After a spell in November, the urine stream lost the usual projection and came in the form of a corkscrew, or by drops; urinated about twice a night. For the last two years no erections. On running, he gets short of breath. In 1891 he was operated upon for a right inguinal hernia, and had the same operation done over again 3 years ago. From this time, when he weighed 170 pounds, he fell to 143 pounds which he weighs at present. After having had a good evacuation, he always feels somewhat better. He had white spots on the side of his tongue and on his lower lips at the time of the specific infection.

Status.

Patellar-reflexes on both sides *exaggerated*. *Pupillary reflexes* on both sides *absent*. Pupils small. *Tongue: Deviation to the right*. Right eyelid somewhat weaker than the left one. Cannot whistle very well. The right half of the mouth does not close well; on opening the mouth, the right side is much wider than the left side.

Rhomberg: Slightly positive. *Heel walk*, very pronounced. Very slight tremor of the fingers. No nystagmus.

Lungs: Normal. *Heart: Apex*, heaving 5th intercostal space in mammillary line; no murmurs. *Liver: Edge thin, sharp*. *Spleen* not palpable.

Right kidney: Lower third palpable. Cœcum and sigmoid flexure filled with scybala. Rectum lax. Prostatic gland normal.

Sensitiveness to pin prick, as well as heat and cold *normal* all over the body. Intellect somewhat slow.

Urine.—(Passed in office) 1008; acid; moderate albumin; no indican. Sediment: Moderate leucocytes; a few red blood corpuscles; moderate kidney epithelia; a few hyalin casts; excessive small and medium sized oxalates of lime.

Urine.—(Bottle) 1005; alkaline; marked traces indican. Sediment: Considerable leucocytes; a few red blood corpuscles; moderate kidney epithelia; a few hyalin casts; a few oxalates of lime.

Blood.—100% Sahli; 5,000,000 hæmatokrit; polynuclear neutrophile leucocytes 76%; lymphocytes 20%; large mononuclear leucocytes (Ehrlich) 1%; polynuclear eosinophile leucocytes 3%.

Wassermann test positive.

Treatment.—Inunction treatment.

June 7th.

Patient feels very feeble; has no appetite. Tongue is coated. Patellar reflex exaggerated. Gingivitis.

June 9th.

Patient feels weak. Appetite unchanged. Bowels move every day.

Pulse: 104.

Urine.—(Passed in office) Moderate albumin; no indican; acid. Sediment: A few long, narrow granular casts; a few medium sized hyalin casts covered with kidney epithelia; numerous leucocytes; excessive tiny *octahedrons of oxalate of lime*.

CHAPTER II.

THE SPINE.

The periosteum, as well as vertebræ, is very rarely subject to the syphilitic process. More frequent are the gummatous diseases of the *meninges*. Among these *the diffuse process is very much more frequent* than the circumscribed. The places of choice are the posterior, cervico-dorsal and dorso-lumbar parts. The diffuse gummatous process spreads to the posterior parts of the cord and along the septa to the spinal nerve roots, and, by accretion of the meninges, it forms tough cicatricial tissue.

We find the peripheral blood vessel district, arteries as well as veins, which supply the exterior part of the white cord, obliterated or thrombotic by a small cellular infiltration. Necrotic foci are formed which lead to sclerotic formation, and thereby cause ascending and descending degeneration of the posterior parts of the cord.

In accordance with the localization of the disease, we must discern two anatomically and clinically well-characterized symptom groups.

I. MENINGITIS SPINALIS SYPHILITICA.

Meningitis spinalis syphilitica, in which one finds spontaneous pain of the spine in the region of the seat of the disease with nocturnal exacerbation (Charcot's *Rachialgie nocturne*), extreme sensitiveness to pressure, pains radiating into the shoulder and upper extremities or into the lower extremities, bladder and rectum; furthermore: paræsthesias, hyperæsthesias and anæsthesias, especially in the peripheral parts of the extremities; trophic disturbances of skin, nails and muscles. General symptoms, like fever, emaciation, etc., are not present.

II. MYELOMENINGITIS SYPHILITICA.

Myelomeningitis syphilitica usually begins with the symptoms mentioned, sub. I, showing suddenly, later on, paraplegias or parapareses and easy exhaustion. Very often the one extremity is paralyzed first, the other being attacked later on, or the paralysis does not show the same intensity in both extremities, or it may be but partial and does not affect all movements equally.

The reflexes are of a very varying character: in the "meningitic stage," usually exaggerated; in the "myelitic stage," however, absent. Inasmuch as the necrotic foci are generally small, the course of the disease is more mild; the disturbances of the

bladder and the rectum are marked, as a rule, by a certain weakness of the sphincter muscle only; the gait becomes *spastic parietic*, while the muscles themselves remain limber. This *pseudotabes syphilitica* is easily differentiated from the *genuine tabes* because: (1) it is ten times as rare as the latter; (2) does not show as progressive a character as the *genuine tabes*; (3) the typical oculopupillary symptoms are lacking (miosis, rigid pupils and optic atrophy); (4) in many of these cases the energetic antisymphilitic treatment brings about a permanent cure, frequently a partial cure, while with the *tabes* one sees no influence of the antisymphilitic therapy upon the disease.

From the *sclerosis multiplex* this *pseudotabes* is differentiated by the lack of cerebral symptoms, for we find no nystagmus nor imperfect speech.

I wish to add that the majority of all syphilitic cord affections appear in the first two years after infection has taken place.

Repeatedly there is observed a *gummatous affection of the cauda equina*, mostly in females.

CASE 7.

J. A. B., 40 years of age, had malaria in Texas with fever and chills up to his 22nd year. At the same time he had asthma. As a child, he had typhoid fever. *Eighteen years ago* he thought he had a soft ulcer. *Fifteen years ago* he married, after having been assured he was perfectly well.

His wife had two miscarriages, the first during the seventh month and the second in the eighth month: gave birth to three living children, of which one is now living. Four years ago she miscarried again in the third month.

Patient states that *three years ago* he was seized with a *spell similar* to the one from which he is suffering at present, but it lasted only from three to four weeks, while the present spell has been going on for ten weeks. This started with pain in the region of the fourth to sixth cervical vertebræ, radiating between and into both shoulders.

The shaking of a street-car would produce sharp pain in the back of his neck. *The head would be pulled backward frequently.* Hot water applications relieved his pain. At that time he had no sore throat, no fever, *became worse at night.* In the beginning of the disease he could lift his hat with the right hand, but not, with the left. At present he cannot stretch out his arms to the horizontal position, nor can he raise them, but he can move his brachial and triceps muscles and all forearm muscles.

All the time he complains of periodic *paraesthesias* in the finger tips of both hands. Pressure on the fourth to sixth cervical vertebræ is painful; the same along the cervical plexus. *A year ago* he complained for two or three days of *severe pains in his neck.* The sensibility of his skin is normal; the patellar reflex normal; somewhat constipated and

foetor ex ore; no nystagmus; speech impaired at no time; never dizzy.

Pupils.—Of different size, left larger than the right; somewhat irregular; not well reacting to light.

Lungs, Heart, Liver, Spleen.—Normal.

The glands of the neck, cubital and inguinal regions small and hard. He does not drink water; sleeps well; has good appetite; no noises in ears.

Urine.—(Bottle) Amber; slightly turbid; normal odor; 1015; no albumin; no sugar; no bile; *considerable indican*. Sediment; no red blood corpuscles; considerable leucocytes; moderate squamous epithelium; some pus shreds. Urea, 1.2%.

Patient states that he was treated with massage and electricity in a sanatorium and at home for over two months, apparently without relief. His wife, whom I happen to know from a year before, showed patellar reflexes absent; immovable pupils; Rhomberg positive. She has been operated upon for floating kidney and gastropnoxis on account of what afterward developed to be gastric and renal crises. She complained of shooting pains in her lower extremities, and, after having been put on inunction treatment (after her husband had been cured of his present ailment) got relief.

The diagnosis of this case was *leptomeningitis cervicalis syphilitica*, and inunction treatment was decided upon. His *blood* showed at that time: 100% hæmoglobin; 72% polynuclear cells; 5.5%

eosinophile cells; 16.5% lymphocytes; 2% large leucocytes; 4% transition cells. *Wassermann* was not made at that time.

After three weeks of inunction treatment the patient, who used to walk about the street with a valet to help him put on his coat, open the door, cut his meat, feed him, etc., met me incidentally in a restaurant, stretching out both his hands to shake hands with me, and urging me to a boxing match, having regained, apparently, the full strength of all his muscles.

The treatment was continued, however, for five weeks more, and when Dr. Matson, in 1909, tested his blood with *Wassermann* test, he found the latter *positive*, thereby corroborating my previous diagnosis as reliably as the success of the specific treatment did.

CASE 8.

Mr. E. J. N. 26 years of age. Rancher.

September 26th, 1909.

Rides horseback a great deal. Five years ago, patient acquired sclerosis; 2 months later, some copper-red spots appeared; some sores in the corner of the mouth. Immediately after appearance of the sclerosis, patient took mercury pills, off and on, for one year. He has not felt strong since having had the infection, though never complaining of any pains. Two years after the infection, the *right*

ankle swelled with thickening of the capsule; *extremely painful at night*.

Temperature: 99 to 99½.

There was no pus in the joint. He again started to take mercury and iodide, and with a plaster Paris cast got well in 2 months' time, and remained so until 3 weeks ago, when he suddenly experienced, while riding horseback, a sharp pain along the waist-line. Took sick with chills and fever and vomiting for four days. The *backache* kept him from sleeping, as it was more intense *at night*. For two or three days he had no stool. He had at the same time *headaches* and *dizziness*; would not, however, give up his occupation, and kept on riding horseback for four days more, until, seven days after the beginning of the disease, he could no longer move his left leg, though still moving the right one. He had in the whole body and both legs a cold sensation. Both *knees* were very *painful, mostly at night*, so that he could hardly sleep without medicine. When the pain left him in the knees, it shifted into the lateral portion of the back. After taking protoiodide for two weeks, the headache ceased. This morning he could eat again.

Status.

Patellar Reflex: Right, normal; left, only slightly present. *Sole reflex* retarded. The passive extension of the left leg, while being flexed in the hip joint, causes great pain along the sciatic nerve.

Kernig positive. *Left adductor muscles paretic; all other muscles working.*

Pupillar Reflex: Normal on both sides. *Lungs, heart:* Normal. Sensitiveness to pin prick, heat, and cold, normal all over the body. Left sciatic nerve painful to pressure down to the knee. *The 5th lumbar sacral vertebra very painful to pressure. Left lumbar muscles and left long dorsal muscles very hyperæsthetic, right long dorsal muscles moderately hyperæsthetic.*

Patient is able to flex and extend the leg in his knee as well as in his hip joint when lying on the left or right side. Lying on his back, however, he can bend the left leg only in the hip joint, without being able to extend the leg in the knee joint. The right leg is normal.

Urine (Bottle).—Amber; turbid; slightly alkaline; 1015; traces albumin; no sugar; no bile; considerable indican. Sediment: Leucocytes; a few squamous epithelia; excessive phosphates.

Wassermann test negative.

September 28th.

The right lumbar muscles and long dorsal muscles painful to pressure; the left long dorsal muscles somewhat painful, too.

Treatment.—Iodides and inunctions.

September 29th.

Patient feels better; is sleeping better; no pain in back.

September 30th.

Patient does not complain of headache in the afternoon any more; sleeps well; has good appetite.

October 1st.

Left patellar reflex absent; right lessened; no pain; somewhat constipated; can sit up by himself and roll from one side to the other without help; he cannot cross his legs.

October 2nd.

The elevating of the left extremity while lying on his back is impossible.

October 6th.

Patient feels well; can sit up and walk without crutches, but the adduction of the left leg, as well as of the right leg, the same as the crossing of the knees, impossible; *patellar reflexes absent on both sides*; considerable painfulness to pressure on the long dorsal muscles; not of the vertebra.

October 12th.

Patient can extend the right leg and keep it extended, the left leg he can extend but not keep in that

position; he cannot cross his knees yet; appetite good; the long dorsal muscle on the left side still painful to pressure; sleeps well.

Heart.—Normal.

Patellar Reflexes: *Right, indistinct; left, absent.*

Sole reflex on both sides: toes moving dorsal.

October 15th.

The last 4 days, patient thinks condition stationary. The adduction and flexion of the left femur impossible; all other movements of the left leg possible. The adduction of the right femur impossible; all other movements possible. *Heel walk; patellar reflexes both absent*; no headache; sleeps well; pupillar reflexes normal; considerable painfulness to pressure in the flexors of the femurs.

October 18th.

Patient can extend the left leg better and keep it for a while elevated in that position, while lying on his back; he cannot cross his knees as yet. *Patellar reflexes*: *Right, indistinct; left, absent.*

October 23d.

Sensitiveness to pressure along the left lumbar muscles; patient cannot get up from the chair without assisting himself with his hands. All movements of the right leg are good, with the exception of putting it over the left knee; the left leg the same.

Rhomberg.—Negative.

October 26th.

Patient can extend both legs and keep them extended.

November 3d.

Patient walked 10 blocks without help.

CHAPTER III.

THE HEART.

In the year 1845 Ricord published the first case of syphilitic disease of the heart and pericardium verified by post-mortem.

Syphilis of the circulatory apparatus ranks among the most characteristic lesions. Syphilitic myocarditis is followed frequently by sudden death (occurring in 21 of 63 cases reported by Mracek), while syphilis of the large blood vessels, like the aorta, subclavia, poplitea, leads to aneurysm, whereas syphilis of the basilar, radial, and tibial blood vessels leads to obliteration and its sequelæ.

We shall consider :

I. PERICARDITIS.

It is of a fibrous (adhesive) or, less often, of a gummatous nature, which co-exist frequently. It is confined to the sulcus cordis, the root of the large vessels, and the anterior surface of the heart and its apex. Thus it leads to *synechia* of the heart muscle with the pericardium and *stenosis* of the large blood vessels. The symptoms are about the same as with the non-syphilitic lesions: lancinating

pains, oppression in the region of the heart, dyspnoea, asthma. Physically we find crepitus at the base of the heart, enlargement of the area of dullness, dull heart sounds, "systolic retraction," steno-
tic murmurs over the large blood vessels.

II. MYOCARDITIS.

This may be again either fibrous (interstitial) or gummatous, both usually associated. The former is most frequently localized in the left ventricle, the apex, or the septum ventriculi; the latter in any part of the heart. Either one appears in foci.

Clinical symptoms are: early arrhythmia, considerable dyspnoea, partial aneurysm, hypertrophy plus dilatation, shortness of breath, precordial pain, obstinate bronchial catarrh, swelling of the liver, spleen, kidneys (albuminuria), sensation of fullness and pressure in the epigastrium. Hydrops appears much less pronounced than with the non-syphilitic lesions of the heart muscle. Quite frequently we encounter emboli of the retinal vessels. Death comes usually unexpectedly without severe pain. Generally speaking, *syphilis of the heart is rare*. In the Vienna Institute of Pathology it was found six times in 100,000 post-mortems.

If the case comes under treatment in the beginning it may be cured.

III. ENDOCARDITIS.

Endocarditis, again, is either fibrous or gummatous. The former involves mostly the parietal endocardium of the left ventricle and apex, forming thick grayish, indurated, cartilaginous scars. More rarely it attacks the edges of the valves, which latter show, in that case, whitish or yellowish-white nodules or indurated edges, one or the other valve generally remaining free. Clinically we find very light systolic murmurs, only a moderate accentuation of the second pulmonic sound.

The gummatous endocarditis is localized on the endocardium of the left ventricle, and leads to thrombosis and, by the necrosis of the latter, to emboli.

IV. ARTERITIS.

Arteritis, again, is fibrous or, more rarely, gummatous.

The lesion starts from the vasa vasorum, reaches through the wall of the blood vessel into the intima, and changes the arteries into indurated rigid cords which are painful to pressure.

If localized in the brain arteries, the lesion will produce the following symptoms: Vehement and obstinate headaches, decreasing memory, dizziness, apoplectic spells, hemiparesis, hemiplegia, aphasia, amnesia.

If localized in the arteries of the meninges and convexity of the cortex, we encounter: vomiting, convulsions, unconsciousness, coma, and, in chronic cases, dementia.

The lesion may be localized in the aorta, most frequently attacking the ascending aorta, the arches, and thoracic aorta. We find on the intima indurations which make it appear rough, or calcification, which transforms the vessel into a rigid tube. Defects of the intima lead to the formation of *aneurysma dissecans*.

The media and adventitia are always attacked at the same time.

Welch considers 50% of aortic aneurysms of syphilitic origin. *Etienne* places it even higher at 70%. Anatomically one cannot distinguish between the syphilitic and non-syphilitic lesions.

On the arches of the aorta, the process is localized at the place of the highest blood pressure, to wit, on its convex side.

If the lesion in the smaller arteries leads to obliteration or stenosis, we find the pulse small and filiform, cyanosis, paraesthesias, diminished tactile sense in the finger tips, cold extremities.

Syphilitic phlebitis is a very rare occurrence.

CASE 9.

Mr. J. Sch. Butcher.

38 years of age.

September 16th, 1908.

Complains of *pain in the left chest*, left armpit and shoulder; has been unable to sleep on this side for the last eighteen months; has this pain *not at all when he works*, as he claims, because he forgets it, but *when he retires he cannot endure the pain*, as it shoots even into the elbow.

Status.

Heart.—Apex one finger's breadth inside the mammillary line; systolic and diastolic murmurs in the left second intercostal space at the costo-chondral junction, this being the place which is very painful to pressure; the second rib at this place is somewhat bulging, pulsating visibly; left subclavian visibly pulsating; there is a sensitiveness to pressure of the left second, third, and fourth ribs; pain along the left second intercostal nerve throughout its whole course, of a lancinating nature.

Lungs.—Normal.

Urine (Passed in Office).—Amber; clear; acid; 1015; faint traces albumin; traces bile; moderate indican. Sediment: A few leucocytes; a few squamous epithelia.

Treatment.—Gelatine, sodium iodide, camphor, codein.

October 24th.

Patient has very much less pain in the left shoulder; can sleep now; has taken three bottles of sodium iodide which contained 20 grams each. *He admits having had a soft chancre as a soldier.*

Heart.—Apex at the 5th rib in mammillary line, with a diastolic murmur; over the left intercostal space systolic as well as diastolic murmurs, subclavia showing a light systolic and diastolic soft murmur; second rib somewhat bulging; patient does *not* complain of that *lancinating pain along the intercostal nerve.*

November 1st, 1909

Patient has felt better when taking iodides, but for the last few weeks he complains again of the pain along the left shoulder and along the left intercostal space and left arm, *especially at night.* In daytime, *while he is working, he does not feel the pain.* He has been married for 10 years. His wife has never been pregnant. Fifteen years ago, as mentioned before, he had a specific infection without undergoing any treatment for it. He did not notice any eruption on his body; had no sore throat, but he *demonstrates, at the present time, white scars on both sides of his tongue,* the remains of former mucous patches. He has been taking iodides for the last three or four months.

Status.

The Glands of the Body.—Cubital, axillary, cervical and inguinal are all hardened, somewhat enlarged and indolent. There is visible on the dorsum glandis a lentil-sized white scar, the place of the former chancre.

Heart.—The left third and fourth rib in the region of the costo-chondral junction bulging and visibly pulsating; both the supraclavicular regions as well as the incisura juguli pulsating. *Apex*, broadened and heaving at the 5th rib one finger's breadth outside the mammillary line; a *very distinct diastolic murmur*, a loud *systolic* sound; over the bulging part of the third rib one can hear a very loud systolic murmur as well as an indistinct diastolic one. *Second aortic* sound is accentuated; the first, slight systolic murmur. Pulse, 84 regular; *beating synchronous in both radial arteries*. Tonometer 95, right as well as left artery.

Urine (Passed in Office).—Amber; clear; acid; 1020; no albumin; no sugar; no bile; iodine positive. Sediment: A few leucocytes; a few squamous epithelia.

Wassermann test partially positive.

Treatment.—Inunction treatment instituted.

The result of this treatment has been mentioned in Part I, page 33.

CASE 10.

Mr. T. P.

41 years of age.

March 5th, 1906.

Six feet tall; weight 173. He has felt tired for the last six or seven months; looks pale; appetite was good until lately; complains of rattling in his throat; coughed once, bloody expectoration; last week he did not sleep well on account of La Grippe, as he thinks. He feels the rattling in his throat much more when lying down. The air seems to pass into the throat well enough, but on passing out he hears the rattling noise. Last week the voice turned hoarse and gave out easily. The last four weeks frequent night sweats.

One sister contracted tuberculosis from her husband. One brother is sick with pulmonary tuberculosis in Arizona. Father and mother are alive and well. Mother suffers from neuralgia. Two other brothers and two sisters healthy.

Larynx.—Shows the ary-cartilages swollen and reddened. The vocal cords somewhat turbid, not shiny white; some pus on the ary-cartilages.

Lungs.—Left supraclavicular region shows bronchial râles on inspiration and expiration. Left posterior upper region shows bronchitic râles besides sonorous small râles; the same in the left *posterior lower region* and right *posterior MIDDLE region*; right anterior *lower region*, bronchitic râles. Liver,

spleen, nothing abnormal. Right kidney, lower half palpable.

Urine.—Amber, acid; 1021; slight trace serum and nucleo-albumin; slight traces indican; no sugar.

Arteries.—Beaded and hard.

Pulse: 80; *every other beat double*.

Tonometer (Gærtner): 128.

Blood.—(Gowers); 88% hæmoglobin. Normal relation of red and white corpuscles.

Sputum.—On March 9th *no tubercle bacilli*.

March 11th: *No tubercle bacilli*.

March 19th: *No tubercle bacilli*.

March 23rd: *No tubercle bacilli*.

Patient went to Alaska, engaged in mining and became well; 2 months ago he took to bed with cardiac insufficiency and dropsy, and called me in on

March 4th, 1907.

I found that patient suffering with edema of both legs up to his waist line. Pulse: hard, very irregular, unequal. Heart: no murmurs.

Urine.—Amber; slightly turbid; acid; *considerable albumin*; no sugar; *excessive indican*. Sediment: *Excessive, moderately wide hyalin and granular casts*; kidney epithelium; moderate amorphous urates.

Sputum.—Bloody, foamy, *no tubercle bacilli*.

Treatment.—Camphor drops; diuretin, 15 grains every three hours; infusion of digitalis leaves, 7½ grains to 5 ounces water for 24 hours.

March 5th, 1907.

Patient slept much better last night than for the last three months. The camphor drops gave him immediate relief. He has passed four quarts of urine in 24 hours. *Pulse* is *irregular*, but of good tension. Left hand and left leg are more edematous than the right ones. The general edema slowly disappearing. *Sputum, bloody.*

Treatment.—Tincture *strophanthus*, 10 drops three times a day.

March 6th, 1907.

Pulse: 80, *unequal, intermittent.*

Has passed three quarts urine again in the last 24 hours.

Right side edema nearly disappeared. Left side (leg, hip, abdomen, hand) still edematous.

March 7th, 1907.

Pulse: 80; intermittent every nine beats, but of good tension.

Lungs.—Left anterior inferior region *pleuritic râles.*

Treatment.—Hunyadi; otherwise the same.

March 8th, 1907.

Patient coughs much less; breathing better.

Urine: about 1 quart in 24 hours. *Pulse:* 80, intermittent. Edema of right leg, right arm, and

right hand; ascites reaching to four fingers' width above symphysis in reclining position.

Heart.—No murmurs.

March 11th, 1907.

Pulse: 80; *periodically intermittent*, of good tension. Hydrothorax reaching on the left side up to two fingers' breadth under the scapulæ angulus; on the right side up to three fingers' breadth under scapulæ angulus. Right arm and hand, much more edematous. The lower parts on the right side, hips, calves, etc., still edematous. Left leg not swollen at all. Passes 1 quart urine in 24 hours. Sleeps well and has appetite.

March 14th, 1907.

Tincture strophanthus.

March 16th, 1907.

Edema of arms and legs well nigh gone, but still present in the dependent parts of hip and thighs, as well as of upper arm. Right hydrothorax still somewhat present; left much less. *Pulse: intermittent occasionally*; tension fairly good. Passes daily about three to six pints urine. He gets *short of breath at night* and does not sleep well.

Treatment.—Digitalis, diuretin.

March 19th, 1907.

Urine.—Light amber; turbid; slightly alkaline; 1018; *moderate albumin*; no sugar; traces indican; urea, 1.3%. Sediment: Few leucocytes; few cuboidal kidney epithelia, a few cylindrical epithelia; a few *medium wide hyalin casts*, a few *medium wide granular casts*.

March 20th, 1907.

The left thigh on its posterior surface and on external surface still somewhat edematous. No ascites.

Right hydrothorax 2 fingers high.

Left hydrothorax 1 finger high.

Heart.—*Regular beat*; *good tension*; *no murmur*.

Urine.—Six pints a day.

Appetite good.

Treatment.—Tincture strophanthus, 10 drops, 3 times a day.

March 23rd, 1907.

Patient suffered last night with shortness of breath, which did not improve with camphor drops, but did improve on a fresh solution of the same. He sat around all day, took a bath. Legs, both edematous. *Pulse:* 80; *somewhat irregular and unequal*. *Urine:* Three pints a day.

Treatment.—Theocin, 2 grains three times a day.

March 25th, 1907.

The last three nights, after having finished the digitalis, patient again suffered *spells of dyspnœa*, which kept him from sleeping. *He usually gets these spells towards evening, and becomes very restless; towards morning he feels better.* Both his legs are again edematous. *Pulse: irregular; unequal, 80. Respiration labored, 26.* Urine: One pint in 24 hours. Hydrothorax on the right side two fingers high. Edema of the left arm and the rest of the body well nigh disappearing. *Patient makes, on close inquiry, the admission that in 1890 he suffered from a specific infection, spent two months in Arkansas taking inunction treatment and iodides. He had a scabby exanthem after having had an ulcer on the penis which was circumcised.*

He has taken 20 drops of a 20% camphor solution eight times without finding relief. Strychnin gives him half an hour's sleep.

Treatment.—Diuretin, 1, 0 every three hours. *Sodium iodide* 20, 0 : 150, 0; one teaspoonful three times a day, and tincture of strophanthus three times a day.

March 27th, 1907.

Patient passed only four ounces urine to-day. *Pulse: 120, of lower tension, regular.* Both legs somewhat edematous. Diuretin does not relieve his dyspnœa. I decided to try *heroic specific treat-*

ment. Gave him 1% mercury bichloride solution: 20 drops by injection.

March 30th, 1907.

Patient has not slept for three nights. The dyspnoea and the pain in the epigastrium compel him to sit up.

Right hydrothorax starting at the fourth rib. Edema of both legs up to the knee. One quart urine only.

Treatment.—Digitalis; *inunction with Unguentum Hydrargyrii.*

April 1st, 1907.

Patient feels better this morning; breathing better; edema not much changed. Pulse: 88; regular. Respiration, 26. Ascites 3 fingers' breadth above symphysis, in reclining position.

Hydrothorax the same.

Treatment.—Calomel, 1 grain three times a day. Tincture strophanthus.

April 2nd, 1907.

Urine.—Amber; turbid; 1020; traces of serum albumin; *considerable nuclealbumin*; no sugar; *excessive iodides*; *Essbach*: 1%. Sediment: *Excessive urates*; *excessive epithelial casts.*

April 4th, 1907.

Patient passed three pints urine on drinking juniper tea. Edema unchanged. More dyspnœa. Pulse: 100; regular. Respiration, 30.

Treatment.—The same.

April 6th, 1907.

Hydrothorax on right side (posterior) reaching up to the spina scapulæ; on the anterior side, to the third rib. Left hydrothorax 2 fingers' breadth high. Pulse: 108; regular. Respiration: Labored, 30. Urine: Three pints. Edema unchanged.

Treatment.—Digitalis and diuretin.

April 8th, 1907.

Patient passed only one pint in 24 hours. Complains of pain in the right chest. *Heart shows systolic pericardial rub on its left and lower border in mammillary line.* Pulse: 80; regular; tension high.

April 9th, 1907.

By aspiration I recovered $2\frac{1}{2}$ quarts of bloody liquid from his right chest.

April 11th, 1907.

Patient passes three to four pints urine a day. Sleeps well. *Heart: Pericardial rub* over the whole area of dullness of the heart. Dullness of the

lungs, on the posterior surface of the chest, beginning two fingers' breadth beneath *angulus scapulæ*. No edema of the legs. Edema of the left arm.

Treatment.—Inunction with mercury ointment, and continued tincture of iodine over the region of the heart.

April 13th, 1907.

Patient has felt very weak since this afternoon; cannot get breath. Status: Dullness of the heart extending over the upper part of sternum and beyond the right border of the same; to the left reaching one finger's breadth beyond the mammillary line. There is a pericarditic rub beneath the upper sternum. Pulse: 120; unequal.

Treatment.—*Digitalis*.

Urine.—Amber; turbid; acid; 1025; *considerable albumin*; no sugar; *moderate indican*.

April 16th, 1907.

Legs edematous on their posterior surface, the left arm not edematous. Area of the heart's dullness smaller. Pulse: 99; somewhat unequal. Respiration: 24. Urine: One pint.

Treatment.—Calomel, two grains three times a day.

April 22nd, 1907.

Patient has felt better the last two days, but *at night*, about 10 o'clock, *shortness of breath starts in again*. Diarrhœa, 10 to 12 times a day.

Treatment.—Decoct. Sarsaparillæ 15,0 ad 150,0 aquæ, bijodati hydrargyrii 0,15, Kal. iodati 4,0: of this solution 3 tablespoonfuls a day.

April 25th, 1907.

The last two nights patient had hard breathing spells again. Feels very depressed. Urinates once a day. Pericardial crepitus not audible.

Treatment.—Hypodermic injections of mercury bichloride, 1%, 20 drops.

April 27th.

Patient salivated.

April 30th.

Patient much salivated. No appetite. He is "falling off in" flesh. Must sit up on account of dyspnœa. Dullness on the right side of the chest, beginning at the fourth rib in front and angulus scapulæ posteriorly. Edema of the legs. Ascites. *No pericarditic crepitus*; however, systole over the aorta, exhibiting murmur.

Pulse: 104. *Respiration:* 28.

Treatment.—*Digalen.*

May 3rd.

Gums in better condition. Hydrothorax lessening. Edema unchanged. *Pulse:* 96. *Respiration:* 24. *Urine:* 1½ quarts in 24 hours.

Treatment.—Injection 1% mercury bichloride.

May 4th.

Urine.—Amber; slightly turbid; acid; 1012; 2½% albumin; no sugar; no indican. Sediment: Hyalin casts covered with kidney epithelia and fat globules; numerous granular and epithelial casts; a few red blood corpuscles; a few squamous epithelia.

May 5th.

Patient very weak; has not slept. *Pulse:* 106. *Respiration:* 26. *Urine:* 2½ quarts.

May 7th.

Patient very restless. *Pulse:* 102; regular. *No pericarditic rub.* Hydrothorax, œdema, and ascites not changed.

May 9th.

On digitalis and diuretin patient has not suffered any shortness of breath and passed 2½ quarts urine in 24 hours.

Pulse: 76. *Heart:* Nothing abnormal. *Lungs:* Dullness beginning on both sides at the angulus scapulæ.

Treatment.—Injection mercury bichloride.

May 13th.

Patient has been unable to breathe well for two days. *Urine:* Quantity diminished. The site of

hypodermic injections very painful. Pulse: 108; regular. *No pericarditic crepitus*. Respiration: 26. Dyspnœa, hydrothorax unchanged. Edema of both lower extremities and the left forearm.

Treatment.—Intravenous injections of strophanthin brings pulse down to 78, making it fuller and diminishing the dyspnœa within 10 minutes.

Treatment.—Digitalis tablets.

May 14th.

Patient complains of having had painful, slimy and bloody stools for the last two days, feels very weak and restless, though *he can lie down flat on his back after the injections of strophanthin*. Pulse is regular, 78. Respiration: 24. Urine: Two quarts a day. Has been taking theophyllin and diuretin.

Orders.—Discontinue all medicine.

May 16th.

Patient felt drowsy all day. Feels weak, though *not having any difficulty in breathing*. Complains of considerable pain in both hypochondria. Had twelve bowel movements.

Treatment.—Tincture opium.

May 19th.

Patient has passed 5 pints of urine after the last intravenous injection of strophanthin and felt very well. *The edema of the legs as well as the ascites and the hydrothorax have disappeared*. How-

ever, both arms, especially the right one, are swollen again, and the patient feels exhausted. At present his pulse is 108, somewhat irregular. Heart: Nothing abnormal audible.

Treatment.—Digitalis tablets.

May 22nd.

Patient feels very restless. Has passed only one pint of urine in the last 24 hours.

Pulse: 104; regular (has taken the last tablets of digitalis this morning).

Treatment.—Hypodermic injections $\frac{1}{4}$ grain of morphine.

May 26th.

Patient complains of considerable difficulty in breathing. *Pulse:* 120; regular. *Nothing abnormal audible over the heart, except that its dullness reaches one finger's breadth beyond the right edge of the sternum.* Bilateral hydrothorax beginning at the angulus scapulæ. No edema in the arms. Edema of the legs moderate. Urine: One pint. Tongue clear.

Treatment.—Intravenous injection of strophanthin.

May 28th.

Patient very weak and restless, cannot sleep. Passed one pint of urine only in 24 hours. *Pulse:* 104; regular; tension moderate.

Treatment.—Injection mercury bichloride.

May 29th.

Patient again restless. Dyspnœa. *Respiration:* 36. *Pulse:* 112; regular. He passed three pints of urine in 24 hours since taking diuretin.

Treatment.—Digitalis, morphine.

June 3rd.

Patient restless. *Pulse:* 120; regular. *Heart:* *Nothing abnormal audible.* Hydrothorax and edema unchanged. Voided $\frac{1}{2}$ pint of urine in the last 24 hours.

June 6th.

Patient has not been short of breath for two or three days.

Pulse: 96; regular; tension, however, lessened. *Heart:* Nothing abnormal audible, except accentuated second pulmonic sound. Ascites, edema unchanged. In spite of taking diuretin and theophyllin, he has passed only $1\frac{1}{2}$ pints of urine.

Treatment.—Caffein.

June 7th.

Anuria since yesterday. *Pulse:* 96; regular. Patient did not sleep.

Treatment.—Kal. Acet. 30, 0:180, 0 Aquae.

June 8th.

Pulse: 100; small. Patient passed one pint of urine in the last 24 hours.

Treatment.—Intravenous strophanthin.

Patient very restless; difficulty in breathing; spells of sudden *pain* in the region of the *kidneys* and a peculiar sinking sensation.

Urinate 1½ pints in 24 hours; dropsy not changed.

Treatment.—Morphine, camphor.

June 10th.

Patient has slept all night and has had *no difficulty in breathing*. Felt rested all the following day after the hypodermic of morphine and camphor. Has passed two pints of urine in 24 hours.

June 11th.

Patient feels exhausted. Pulse is irregular and unequal; 96. *Urine:* Only ½ pint in 24 hours.

Treatment.—Morphine and Digitalis.

Status.—Idem.

June 14th.

Restless. Pulse: 92. Urine: ½ pint. Digitalis has given him relief.

Pulse: 84; intermittent, unequal.

Treatment.—Calomel.

June 15th.

Patient is short of breath and realizes that he cannot get well. Voided $\frac{1}{2}$ pint urine in 24 hours.

Treatment.—Injection morphine.

June 17th.

Patient suddenly started to void urine in spite of the morphine last night; passed one quart.

Pulse: 100; small; somewhat irregular.

June 18th.

Patient asks continually for morphine. Voided only $\frac{1}{2}$ pint of urine.

Treatment.—Morphine; agurin 1,0 three times a day.

June 21st.

Urine.—Amber; slightly turbid; acid; 1016; *no albumin*(!!!); no sugar; moderate indican; urea 1.2%. Sediment: Moderate leucocytes and squamous epithelium.

June 22nd.

Patient passed since taking agurin, $1\frac{1}{2}$ pints of urine. Has two one quarter grains of morphine daily by hypodermic. *Heart* shows evident *mur-murs over the left two intercostal spaces.*

Pulse: 92; regular; tension good. Ascites reaches two fingers' breadth above symphysis in reclining position. Edema of the legs.

June 27th.

Patient is delirious at times. Involuntary urination. Pupils small. Dropsy.

Pulse: 100; regular, of low tension; systolic murmur.

June 29th.

Exitus.

CASE 11.

M. G. E. W. (Single.) 40 years of age.

October 27th, 1907.

Patient complains of an eruption on his body of 6 or 7 years' duration, slowly spreading, itching when in bed, especially when getting warm. He claims to have had the same eruption 20 years ago, which healed with Fowler's solution. Lately the eruption has spread over the scalp.

13 years ago patient admits having had a specific ulcer, without exanthem, and with no complication in the throat.

Status.

The whole body covered with reddish, yellowish circles, raised somewhat on the periphery, depressed, pale and peeling in the center. The same on the scalp. On both sides of the nose lupus erythematoses spreading over the cheeks. Tongue clean, no mucous patches.

Glands.—Only those of the neck are small and hard; on the rest of the body *not* enlarged.

Lungs, Heart, Liver, Spleen.—Normal.

Reflexes.—Patellæ, exaggerated. Pupils, normal.

Urine (Office and bottle).—Dark amber; turbid; slightly alkaline; 1030; no albumin; no sugar; moderate indican; urea: 1.4%. Sediment: A few leucocytes; a few squamous epithelia; amorphous phosphates; numerous spherules of ammonium urate.

Blood.—100% Sahli; size and color of red blood corpuscles normal; 50% polynuclear neutrophile leucocytes; 7 % polynuclear eosinophile leucocytes; 37½% lymphocytes; 4½% large mononuclear leucocytes; 1% transition forms (Ehrlich).

Treatment.—For psoriasis, B. Naphthol soap 5%.

November 30th.

Exanthem has disappeared on the scalp by treatment with tincture Rusci. On the body, however, where the above soap was used, the spots are still unchanged. Patient states that 20 years ago he took Fowler's solution for three months, and the whole eruption disappeared after that, but he had to cease taking the solution because the kidneys were being affected.

Treatment.—Drew's ointment for the body; atoxyl injection and mercury plaster for the face.

December 10th.

All the psoriasis spots on the body have disappeared, leaving pale places surrounded by skin darkened from the treatment.

Urine (Office).—Amber; clear; acid; no albumin.

January 21st, 1908.

Patient has taken 28 injections of atoxyl (0.5 each injection). His head feels full. He feels bilious. Appetite changeable. Bowels move well.

Urine.—Dark amber; acid; 1025; no albumin; traces indican; no sugar. Sediment: Excessive large octahedrons of oxalate of lime; a few squamous epithelia.

February 12th, 1908.

Patient shows a few new spots on the extremities; scalp and trunk, clear.

Urine.—1025; no albumin; no indican; no sugar. Sediment: Excessive small and middle-sized octahedrons of oxalate of lime; a few squamous epithelia.

February 24th.

Patient notices a few efflorescences again. Used the same treatment, whereupon the skin became red and swollen, with burning of the eyelids. The exanthem on the rest of the body has disappeared.

Urine.—Alkaline; no albumin; slight traces indican.

March 9th.

Patient complains of "poison oak" on the inside of his legs (dermatitis).

July 29th.

Three weeks ago, patient had a tooth extracted. Two weeks ago, there appeared a pain between the shoulders and in the supraclavicular region, worse at night, though lasting all day. General malaise.

Status.

Sensibility in the right lower jaw; increased pain to pressure, on the right lingual nerve, occipital nerve, the shoulder muscle, lower cervical vertebræ and upper dorsal vertebræ. Right lower wisdom tooth somewhat carious.

Treatment.—Iodine tincture, aspirin.

September 27th.

Patient complains of oxyuriasis, itching in the anus for the last 3 weeks. Seven years ago, he had the same complaint, and cured it after 3 months with thymus decoction.

October 28th.

Patient complains of having experienced a sensation of suddenly "having his wind cut off" when he lay down in bed last night, having at the same time

palpitation and restlessness. The next morning he felt *soreness in the region of the heart*.

Heart.—Over the aorta there is a systolic murmur, second sound accentuated.

Urine.—Amber; clear; acid; 1015; no albumin; no sugar; no bile; faint traces indican. Sediment: A few leucocytes; a few squamous epithelia.

Reflexes: Patellæ and pupils, normal. Pulse: Regular; 64. Tonometer: 85.

On this day, fully a year after having been consulted by the patient, I made up my mind (considering the clinical symptoms of the case, the nocturnal neuralgic pains, mentioned before, and the symptoms of the aortic stenosis of to-day) to subject the patient to a *Wassermann test*, which proved *positive*. Specific treatment was immediately instituted with iodides and inunctions.

November 12th.

Patient relates that, when he was a child of 9 years, he had for the first time psoriasis on his chest and ear. It disappeared with Fowler's solution after 4 months' treatment. Then, when 21 years of age, it broke out again on both arms and ears. It disappeared with Fowler's solution again. When 31 years of age, it returned and has remained with him ever since, though disappearing every time with the application of Drew's ointment for 2 or 3 months. He has suffered with headache all his life, not especially worse at night. His oldest brother

is 65 years of age. He has a sister of 62 years, another brother of 55, and one of 48 years. He himself is the youngest, being 40 years of age. A brother older than himself died of tuberculosis three years ago, and three children before birth of his oldest brother died, one at the age of 3 years, one as an infant shortly after birth, and the third at 12 months of age. Father died at the age of 70, of tuberculosis, and mother died at the age of 68 with "dropsy."

Patient had 13 inunctions, taking iodides internally. Feels very much better.

CHAPTER IV.

THE LUNGS AND PLEURA.

A. THE LUNGS.

Syphilitic pulmonary phthisis has been known to physicians since the end of the last century, but unfortunately it is very rarely recognized now. One should make a Wassermann test in every case of tuberculosis, as the negative history of the patient does not prove the case to be non-syphilitic. This is the main reason why I do not consider the reported cures of tuberculosis by means of injections with mercury succinamide specific for tuberculosis.

We find:

Acute syphilitic bronchitis appears with the first eruption of the disease, simultaneously with the lesions in the pharynx, larynx, and trachea, and disappears afterwards.

Chronic syphilitic bronchitis develops nearly always with stenosis of the larynx or trachea, bringing about extensive lobular infiltration. This affection is characterized by the *conspicuous dyspnœa* which follows every moderate physical effort, and which is in no proportion to the respiratory area involved by the bronchitis.

The dyspnoea in this case may be explained by the irritation of the vagus on account of the swollen bronchial glands.

Syphilis of the lungs appears usually 10 to 20 years after the infection, complicating already existing tuberculosis, or the latter complicating primary syphilis of the lungs.

On the whole, it is a very rare disease. Osler reports 12 cases with syphilitic disease of the lungs in 2,800 post-mortems at the Johns Hopkins Hospital. In 8 of these, the lesions were in congenital syphilis. In all cases there were general gummata. Fowler could find in the museums of the London hospitals only 12 specimens, illustrating syphilitic lesions of the lung.

Considering, however, the very incomplete means at our disposal heretofore for the diagnosis of syphilitic disease of the lung, we may expect quite different data to be found with the help of the Wassermann test. Syphilis of the lung occurs as:

(a) **DIFFUSE SYPHILITIC INFILTRATION** localized around the blood vessels and compressing the same; attacking, however, the interalveolar tissues at the same time, and compressing the alveoli by obliteration of the alveolar capillaries, causing necrosis and cavity formation.

(b) **GUMMATOUS PNEUMONIA**, which consists of the formation of round, yellow, transparent nodules, varying in size from a pinhead to a walnut. The gumma is transformed later into a caseous mass,

which may break through into the bronchi, and thus form a communicating cavity. The latter may heal by granulation (*not so in tuberculosis*). The caseous masses of the gumma, as well as of the tuberculous nodule, consist of the same elements, and would then clinically give a picture of pulmonary tuberculosis without the presence of tubercule bacilli.

Potain claims that syphilis and tuberculosis may exist simultaneously quite frequently. This is of special importance because antisyphilitic treatment, in cases of such mixed infection, will benefit the tuberculosis at the same time, but not if tuberculosis alone be present.

Osler reports a man, age 27, admitted in April, 1902, who for years had cough and bloody expectoration, and who died of severe hæmoptysis. Bacilli were never found in the sputum. There were extensive caseous gummata throughout both lungs, with much fibrous thickening, and in the lower lobe of the right lung a cavity, 3×5 cm. in diameter, on the wall of which a branch of the pulmonary artery was eroded.

In the differential diagnosis it must be borne in mind that the *dyspnœa is out of all proportion to the extent of the pulmonary lesion*. In the beginning the cough is dry; later, when the gummata or infiltrations degenerate into caseous masses, we will get a purulent, lumpy sputum, which frequently is bloody (owing to the change of blood-vessel-walls

in syphilis). Syphilis of the lung may exist for a long time without causing any fever.

While with tuberculosis the *apex* usually is attacked, with syphilis it is the *middle lobe* or the *lower lobe* of the lung which gives dullness on percussion, bronchial respiration, and medium or small moist râles.

While syphilis attacks the right side, tuberculosis attacks by preference the left side first. We rarely find hæmoptysis with syphilis. The lesion in syphilis spreads but very slowly, and even in very far advanced cases may be cured by antisyphilitic treatment.

We may furthermore mention that in syphilitic pulmonary disease we find no hereditary predisposition, no sweats, no evening temperature, the supra-clavicular and supraspinous regions are not retracted, the apex usually showing normal conditions. We must not forget to mention the presence of *spirochæta pallida* in the sputum.

When differentiating syphilis of the lung from the caseous form of pneumonia we must be aware of the fact that pleurisy is far oftener present in caseous pneumonia than it is with syphilis of the lung.

(c) THE INTERSTITIAL PNEUMONIA usually coexists with (a) and (b), and is diagnosticated only at the post-mortem.

The lungs, similar to the interstitial syphilitic hepatitis, appear lobulated, indurated, show bron-

chiectases, owing to the hypertrophy of the peribronchial and interalveolar connective tissue.

(For illustration see Case 10, Chapter III.)

B. THE PLEURA.

It has been known that *acute exudative pleurisy* appears simultaneously or shortly after the cutaneous and mucous eruptions, and is cured by antisiphilitic treatment.

Raynaud pointed out the fact that the pleurisy caused by syphilis is more frequent than is generally known.

Chantemesse finds characteristic for the syphilitic pleurisy its bilateral appearance, usually not accompanied by any violent pains or dyspnœa, very little cough, moderate exudate, etc.

The following case, which I mention from my own observation, proves that pleurisy is not only one of the *early* forms of syphilitic disease, but may appear as a *late manifestation* of syphilis. This case is characterized as syphilitic pleurisy by the mere fact that antisiphilitic treatment has brought about a cure, after aspiration of the thorax had been performed 12 times, without preventing the recurrence of the exudate.

CASE 12.

Mr. W. M. C. Contractor.

52 years of age.

March 2nd, 1907.

One year and a half ago the patient became ill with fever, which lasted for 36 days, and was pronounced "typhoid fever." He had a cough with it, no chills. He suffered, however, with headaches at the time, and was once delirious. Later, pleurisy set in, and on December 23, 1905, 2½ quarts of liquid were drawn from the left side. From this time on, until August 13, 1906, he had been tapped 5 times on *the left side of the chest* and 13 times on the *right* side. Since the last aspiration, when, as he thinks, the needle entered pretty deeply into the cavity, he suffered, especially on standing, with considerable soreness along the left rib arch, as if something there had grown together and had been torn apart again. He coughs a little. He *has lost 40 pounds* in weight since the beginning of his illness. Temperature varies from 99 to 100. Bowels move every day. *Sleeps very well.* Appetite is very poor. Last week he ate nothing but milk and eggs.

His wife had *three children*; to-wit: once twins, who *died* in the first week; the second time, she gave birth to a monstium. Patient chewed considerably tobacco 20 years ago, and drank heavily. Twenty-seven years ago, he *had a specific ulcer with a con-*

spicuous right inguinal bubo, copper red spots all over his body.

Eight years ago, he suffered for three months with *headaches*.

Urine (Passed in Office).—Amber; clear; acid; 1010; traces albumin; no sugar; traces indican; urea: 1.5%. Sediment: A few narrow distinct granular casts; a few wide waxy casts covered with cylindrical epithelia; a few squamous epithelia; nothing else.

Slight ascites. Temperature: 100.4. *Lungs*: There is a well marked *pleuritic exudate* in the right side, beginning in front at the 4th rib (in the mamillary line), at the 6th rib in the axillary line, and at the middle of the scapula posteriorly.

Heart: No murmurs. *Spleen*: Edge sharp; *palpable two fingers' breadth underneath the left costal arch* (seat of the pain). *Patellæ*: Normal.

Teeth: Caries extensive. *Glands*: All of them *hard and somewhat swollen*.

Frenulum: Shows a *lentil-sized white scar*.

Treatment.—First, teeth corrected, then potassium iodide 15,0 to 150,0 water, one teaspoonful three times a day; later inunction treatment.

March 26th.

Patient is breathing much better than before treatment. Complains still of the *pain* under his left costal arch, *especially at night*, keeping him from sleep. Bowels move every day. No appetite.

centuated, *the dullness extending one finger's breadth beyond the right edge of the sternum.*

Treatment.—The same.

April 30th.

Patient still complains of spells of cutting pain along the left costal arch, lasting sometimes all day or all night. He has not been coughing, however, for the last five weeks. Breathes much easier and sleeps much better. Appetite is not very good. Bowels move every day. Pulse: Regular; good tension. Respiration: 28.

Treatment.—One hypodermic of 1% mercury bichloride every 5 days; the remainder, the same.

May 11th.

Patient has had *no pain in the left hypochondrium for the last 5 weeks.* Is not short of breath except on walking fast.

Treatment.—Injection mercury bichloride.

May 16th.

Patient has complained the last three days again of the pains underneath his left costal arch. He has no appetite.

Treatment.—Injection mercury bichloride.

May 21st.

Lungs.—*Respiratory sound audible three fingers' breadth underneath the right angulus scapulæ.*

Dullness begins in front at the 5th rib on the right side as well as on the left side.

Heart.—Nothing abnormal.

May 31st.

Patient has not gained in weight. The pains in the left side do not recur so often. Sleeps well. Has no appetite, however. Taking the stomachic tincture, the strophanthus tincture, and sodium iodide.

Lungs.—Dullness begins at the 5th rib in the right mammillary line, at the 6th intercostal space in the axillary line; posteriorly the dullness begins on both sides one finger's breadth below the angulus scapulæ. Breathing at the apex a little bit sharp, otherwise normal.

Heart.—Dullness reaches beyond the right edge of the sternum; second pulmonic accentuated; no murmurs.

Treatment.—Iodides discontinued.

July 1st.

Patient weighs 145 pounds. *Has gained 6 pounds since starting* the treatment. On lying down, he complains of pains in the right lumbar muscles or in the depth of the left 7th intercostal space. Complains still of shortness of breath.

Lungs.—Condition unchanged except that the *dullness on the posterior surface begins now two fingers' breadth below the angulus scapulæ.* Res-

piration audible all over the chest, somewhat dulled over the lower portion of the lungs.

Heart.—No murmurs audible.

Treatment.—Mesotan; remainder, the same.

September 7th.

Patient complains of shortness of breath. Has to vomit his meals quite frequently $\frac{1}{2}$ hour after eating. Soreness across the abdomen, lasting sometimes for a whole day. On rising in the morning, he frequently has to void urine every 15 to 20 minutes. Bowels move every day. Once in a while head aches. Sleeps moderately well. *No pains in the left hypochondrium.* At night he complains of pains on both sides of his lumbar spine. No cough. No loss in weight.

Urine.—Clear; acid; no albumin; no sugar; no indican.

Lungs.—In front, conditions unchanged. On the posterior surface *dullness begins at the right side three fingers' breadth underneath scapula*; on the left, two fingers' breadth underneath scapula.

Heart.—Regular beat; dullness reaching to the mammillary line on the left side and to the right edge of the sternum on the right side; second aortic and pulmonic sounds accentuated.

Lumbar muscles, as well as rectus muscles, tender to touch.

Treatment.—Iodides resumed.

January 31st, 1908.

Patient complains of shortness of breath, especially when working.

Lungs.—On the right side dullness begins in front at the 4th rib, in the axillary line at the 6th rib; posteriorly relative dullness begins at the angulus scapulæ; on the left posterior circumference the same. Respiratory sound over the area of dullness: Feeble.

Heart.—Over the 3rd left intercostal space systolic murmur; 2nd aortic sound accentuated.

Treatment.—Tincture strophanthus.

February 24th.

Patient still complains of pains in both lumbar regions and in his legs, not worse at night. He cannot sit down.

Treatment.—Inunction with mercury vasogen, sodium iodide; tincture strophanthus.

March 11th.

Patient feels very well after having used the above treatment for 3 weeks. *The rheumatic pains in his legs have disappeared.*

Urine.—Pale; amber; clear; acid; traces albumin; no indican.

Treatment.—Camphor.

October 6th, 1908.

Patient has lost 8 pounds in 2 months. Has no appetite. Complains all the time, day and night, of bilateral lumbar pains, especially when trying to stand up. Bowels move every day. Sleeps well. Sometimes the pain under the left ribs is very burning. Sometimes, though not often, has headaches in the morning.

Lungs.—On the *posterior* surface percussion and auscultation shows *normal conditions on the right side down to four fingers' breadth below the angulus*; on the left side dullness begins two fingers' breadth below the angulus; further down respiration feeble; sound dull; on the *anterior*: right side, dullness begins at the 6th rib.

Heart.—Apex palpable in the 5th intercostal space in the mammillary line; dullness reaching one finger's breadth beyond the right edge of the sternum. An occasional systolic murmur over the second left intercostal space; second aortic sound accentuated.

Both lumbar muscles tender.

Urine.—Acid; marked traces albumin; marked traces bile; no indican. Sediment: A few cuboidal and cylindrical kidney epithelia; a few very short granular casts.

Treatment.—Locally: tincture of iodine. Internally: sodium iodide.

October 30th

Patient has been coughing for 10 days, day and night.

Lungs.—The same as the last date seen. Pharyngitis, laryngitis.

Treatment.—Iodides discontinued; codein syrup.

December 16th.

Patient has been complaining about pain in the lumbar region, radiating into the left sciatic nerve, for the last month, *getting worse toward morning.*

Lungs and Heart.—The same.

Urine.—No indican; no albumin; acid.

January 6th.

Patient complains of excruciating pains in the legs.

Treatment.—Iodides. Heat.

February 16th, 1909.

Patient has complained for the last 2 months of pains in the right lumbar region, which radiate along the right sciatic nerve into the small toes and the planta pedis, causing him extreme suffering of *lancinating nature*, especially at night. Only morphine gives him relief. Six weeks' massage and electricity gave him some relief. Less suffering in the left leg. Is constipated. No appetite. *Lost 15 pounds in weight.*

Patellar reflex.—*Right, negative. Left, exaggerated.* Pupils normal. Tongue dry and coated.

Urine.—Acid; marked traces albumin; very excessive indican. Sediment: 1% urates.

Treatment.—Iodide, acidol pepsin, podophyllin.

February 25th.

Patient complains of shooting pain in both ankles; more in daytime than at night. Bowels move every day. Appetite is better.

Treatment.—Inunction with mercury vasogen; the remainder, the same.

March 6th.

Patient complains of *lancinating pains* more in the right than in the left side, especially *at night*. Both ankles frequently swollen. Bowels move every day. *Patellar reflex: Right, absent. Left, moderately present.*

Pupillary reflex slow. Right pupilla irregular.

Urine.—Acid; marked traces albumin; excessive indican. Sediment: Moderate kidney epithelia.

Treatment.—Inunction treatment continued.

March 25th.

The rheumatism in his legs disappeared after 2 days' inunction. For this reason, patient claims to have ceased the treatment. After 2½ weeks he complained of feeling of pressure in his stomach as soon as he swallowed. Has lost 5 pounds in weight

in the last 30 days, and 15 pounds previous to this. Is constipated, and has to take oil injections besides taking oil by mouth morning and evening in $\frac{1}{2}$ glass of whiskey. Sleeps well. Has no appetite whatever. Does not take any medicine at all. Has complained of headache the last 6 days.

Patellar reflex: Right, absent. Left, normal. Pupillary reflex: Left, somewhat tardy; irregular pupilla; right, not distinct. Tongue, thick, yellowish coat.

Temperature: 99.3.

Lungs.—Left posterior surface: dullness begins at angulus scapulæ; respiration over this area not audible; right posterior surface: dullness begins 2 fingers' breadth below angulus scapulæ. Respiration feeble. On the right anterior surface, pleuritic râles, but no dullness and no impaired respiration.

Heart.—Apex, 5th intercostal space one finger's breadth beyond mammillary line. No murmurs. Second pulmonic sound accentuated.

Liver, spleen.—Not palpable.

Urine.—Very excessive indican; marked traces albumin. Sediment: Numerous cuboidal and cylindrical kidney epithelia; a few broad epithelial casts; a few narrow granular casts; mucus.

Wassermann Test.—*Negative*.

Treatment.—Digitalis.

A few weeks later, the wife of the patient reports his death, which occurred under the symptoms of general paralysis.

CHAPTER V.

THE LIVER.

The liver was considered the primary seat of syphilis by many syphilographers of the 16th century. Now syphilitic affections of the liver belong to the best known syphilitic diseases of the viscera. Aside from the very rare *syphilitic icterus*, which is not always caused by the pressure of enlarged lymphatic glands upon the common duct, but by syphilitic change of the blood vessels within the liver, and which is characterized by lack of gastric disturbances, its rapid disappearance, and by the fact that it occurs more frequently in women than men, we distinguish:

- I. *Interstitial syphilitic hepatitis (cirrhosis).*
- II. *Gummatous hepatitis.*
- III. *Syphilitic amyloid degeneration of the liver.*

I. INTERSTITIAL SYPHILITIC HEPATITIS.

In these cases we find the volume of the liver smaller, the surface uneven, showing protuberances of various size, separated from each other by deep furrows. The edge is sharp, lobulated, very fre-

quently adherent to neighboring organs on account of perihepatitis.

The granulations are light yellow, hence the name "cirrhosis." The condition is caused by the exuberant growth of connective tissue in the interlobular space, spreading into the intra-acinous connective tissue and finally changing into tough, scar-like tissue. By the pressure of this connective tissue, the nutrition of the liver cells is disturbed. The most apparent changes we find *in the left lobe and anterior edge of the liver*, the latter presenting a very sharp edge, while the former is sometimes plainly palpable in the epigastrium assuming the shape of small tumors. As a rule, the liver is not involved in its entirety by this process, but partially, irregularly only. The examination of the liver should be made several times with the patient lying on his left side. In most cases we find it smaller, except if there be, simultaneously, amyloidosis. In this latter case, the size of the liver appears normal.

One of the earliest and most constant symptoms of this disease is the splenic tumor, caused by amyloidosis. *Ascites*—quite in contrast with the non-syphilitic cirrhosis—is *not constant*. The urine turns dark, sometimes icteric, showing faint sediment and albumin. Not infrequently we find vomiting, gastric and intestinal hemorrhages. The feces, while only rarely of normal color, do not show the clay color of the non-syphilitic cirrhosis. Icterus is rare.

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THE LIVER.

The liver was considered the primary seat of syphilis by many syphilographers of the 16th century. Now syphilitic affections of the liver belong to the best known syphilitic diseases of the viscera. Aside from the very rare *syphilitic icterus*, which is not always caused by the pressure of enlarged lymphatic glands upon the common duct, but by syphilitic change of the blood vessels within the liver, and which is characterized by lack of gastric disturbances, its rapid disappearance, and by the fact that it occurs more frequently in women than men, we distinguish:

- I. Interstitial syphilitic hepatitis (cirrhosis).*
- II. Gummatous hepatitis.*
- III. Syphilitic amyloid degeneration of the liver.*

I. INTERSTITIAL SYPHILITIC HEPATITIS.

In these cases we find the volume of the liver smaller, the surface uneven, showing protuberances of various size, separated from each other by deep furrows. The edge is sharp, lobulated, very fre-

quently adherent to neighboring organs on account of perihepatitis.

The granulations are light yellow, hence the name "cirrhosis." The condition is caused by the exuberant growth of connective tissue in the interlobular space, spreading into the intra-acinous connective tissue and finally changing into tough, scar-like tissue. By the pressure of this connective tissue, the nutrition of the liver cells is disturbed. The most apparent changes we find *in the left lobe and anterior edge of the liver*, the latter presenting a very sharp edge, while the former is sometimes plainly palpable in the epigastrium assuming the shape of small tumors. As a rule, the liver is not involved in its entirety by this process, but partially, irregularly only. The examination of the liver should be made several times with the patient lying on his left side. In most cases we find it smaller, except if there be, simultaneously, amyloidosis. In this latter case, the size of the liver appears normal.

One of the earliest and most constant symptoms of this disease is the splenic tumor, caused by amyloidosis. *Ascites*—quite in contrast with the non-syphilitic cirrhosis—is *not constant*. The urine turns dark, sometimes icteric, showing faint sediment and albumin. Not infrequently we find vomiting, gastric and intestinal hemorrhages. The feces, while only rarely of normal color, do not show the clay color of the non-syphilitic cirrhosis. Icterus is rare.

The course of the disease is chronic, interrupted by periods of fair health. The disease appears more frequently in men. One usually finds at the same time gummatous processes in other organs.

We are often called upon to make a *differential diagnosis between hepatic carcinoma and syphilitic cirrhosis*. While albuminuria and splenic tumor suggest syphilis, the most reliable diagnostic symptom is to be found in the fact that rapidly-growing tumors are usually carcinomatous. Syphilitic ulcer-processes in the rectum or syphilitic kidneys speak also for the syphilitic nature of the disease. More convincing, however, is a positive Wassermann reaction.

The prognosis of the disease becomes *infaust*, if, especially, the size of the liver is much diminished, if there be gastric and intestinal hemorrhages and albuminuria with a rapidly progressing cachexia. (Chvostek mentions among 19 cases, 2 cures and 16 deaths.)

II. GUMMATOUS HEPATITIS.

This is much more frequent, and may be termed the "liver syphilis, κατ' ἐξοχήν."

The organ usually is divided into several large lobes which at the edge of the liver appear separated, the most frequent seat being at both sides of the ligamentum suspensorium. The gummata range

in size from a pea to an orange. Centrally the nodules appear usually yellowish or cheese-like, while on their periphery they show a gray-white fibrous tissue, which spreads imperceptibly into the atrophic liver tissue. For the differential diagnosis, it is quite important to know that this fibrous zone is never broad, the nodules are always grouped around the blood vessels and tend to softening, caseation, or calcification, or sometimes, as Jullien reports, to resorption.

The volume of the liver in some cases is smaller, in cases of amyloidosis larger, than normal.

Clinically, we oftentimes find no symptoms at all; sometimes we note pain in the region of the liver, exacerbating towards evening, radiating into the epigastrium, sometimes even into the left hypochondrium, never into the shoulder; or the sensation of pressure and heaviness in the right hypochondrium. Icterus is rare and of short duration. Frequently, one can palpate nodules in the left lobe of the liver or on its anterior edge. If there are adhesions, the respiratory excursion of the liver is impaired. Ascites develops in the atrophic state only. Splenic tumor is rare.

Quite constant is the cachexia. The patients lose weight, show a bronze skin, suffer with hydrops of the pleura or pericardium, anasarca, especially if there be present at the same time cirrhosis of spleen, lung, heart and kidney affections.

The *gummatous hepatitis* is a very frequent symp-

tom of late syphilis, and appears frequently after a long interval when we thought the syphilitic disease entirely cured.

In *differential diagnosis* we again must consider *carcinoma*. The stationary appearance of the protuberances, the finding of a small liver in spite of the present large protuberances of the same, and, furthermore, the extensive deformity of the organ always suggest gummatous syphilis. The *prognosis* of this variety of liver syphilis is more promising than that of the interstitial type, as it is known to heal with, as well as without, specific treatment (Lanceraux).

III. AMYLOID DEGENERATION.

The *amyloid degeneration* of the liver is usually combined with that of the spleen, kidneys, and intestines, very frequently with I. and II. It appears after syphilitic suppurations of long duration. The liver is considerably enlarged in all dimensions. The edge, dull and rounded, is very hard. There is no ascites, though there are usually present splenic tumor and albuminuria.

The "amyloid" forms first in the capillaries of the acini; thereupon the interlobular blood vessels degenerate, foremost among them the arteries. If one pours an aqueous solution of potassium iodide over the cut substance of the liver, the amyloid areas assume a red stain, resembling old mahogany, which

turns into blue or blue violet if sulphuric acid is added.

In spite of an enormous liver, we often find no functional disturbance at all. It takes a long time for a sufficient number of liver cells to degenerate to produce a perceptible disturbance. There are no symptoms produced by stasis in the vena portæ. We notice lack of appetite, belching, nausea, vomiting, bloating of the abdomen, *profuse diarrhæas without ascertainable cause*, and always find marked cachexia.

Prognosis.—The disease is absolutely fatal.

CHAPTER VI.

THE KIDNEYS.

In the kidneys syphilis produces ;

I. ALBUMINURIA.

This may appear at all periods of the disease. In recent cases it is very rare, being more of a transitory character, like that of other infectious diseases. It usually appears soon after the eruption, persists for some time, and then disappears.

We must add that albuminuria may also be the product of mercury treatment, for it was proven to be present in 4% of cases treated with mercury bichloride injections, in 28% of cases treated with inunctions. The explanation one could find either in the direct irritation of the kidney tissue, brought about by the toxins of the spirochæta, or by the hæmoglobin coming from the destroyed red blood corpuscles in the second incubation period of syphilis. The prognosis of these cases is always favorable.

II. HEMOGLOBINURIA.

Hemoglobinuria appears in two-thirds of syphilitic cases in paroxysms, and is explained by a destruction of the red blood corpuscles by the spirochæta. The paroxysms are marked by severe chills, fever, swelling of those parts of the body which are exposed to the cold air, cold sensation in head and feet, backache, exhaustion, bloody urine, which is free from red blood corpuscles. With the night-rest and the warmth of the bed, these symptoms disappear. There is normal urine voided in the morning. Antisyphilitic treatment removes these paroxysms.

III. ACUTE PARENCHYMATOUS NEPHRITIS.

Acute parenchymatous nephritis appears mostly in spots, in the cortex and medulla. The kidneys appear enlarged; the capsule easily strips; the surface smooth; consistency soft; the cortex broadened, soft, sometimes showing hemorrhage foci.

Clinically, there appears sudden edema of the legs, face and eyelids with fever, and vomiting. The urine is always turbid and contains albumin. Sediment: There appear, very early, considerable numbers of broad hyalin casts. These latter, one may find in every case of parenchymatous nephritis, but only after a longer duration of it, not as early as in

the syphilitic nephritis. Anuria we encounter but rarely.

This affection appears usually in the first periods of the syphilis, especially if the latter has not shown any eruptions on the skin or mucous lining.

The prognosis is relatively good, as even very grave cases get well in comparatively short time on antisyphilitic treatment. The serious aspect of the disease is caused by complications like pleurisy and pneumonia.

IV. INTERSTITIAL NEPHRITIS.

Interstitial nephritis we find again in foci, usually combined with parenchymatous or amyloid degeneration of the kidney. The organ is smaller than normal; the capsule thickened, not easily stripped; surface rough; consistency increased; cortex thin on account of complete destruction of the Malpighian bodies (by the hypertrophy of the interstitial tissue between the urinary tubules). The tubules have often disappeared or have formed small cysts. The new formation of this connective tissue has usually started from the adventitia of the small arteries.

The symptoms are: frequent desire to urinate, a distressing sensation in the lumbar region at the onset of the disease; followed by headache, dizziness, disturbances of vision, shortness of breath, asthma, polyuria (over 2,000 c. c. in the start of the disease, lower specific gravity, usually 1,011 to 1,013,

light color, very little sediment, little albumin; the sediment showing narrow hyalin casts, covered with some kidney epithelia). The edema appears much later and is less extensive than with parenchymatous nephritis. Usually one finds syphilis of the liver and bronchitis at the same time. While the course of the disease is chronic, the duration of the same is seldom as long as that of the non-syphilitic, for there are no cases on record of 3 to 7 years' duration.

The prognosis is *infaust*, though one can accomplish a betterment by warm climate and antisiphilitic treatment.

V. SYPHILITIC AMYLOID KIDNEY.

The pure amyloid kidney is a rare occurrence. It is usually combined with III., IV., or VI. Both kidneys are affected; are enlarged; the surface smooth; the cortex broadened and pale. The main seat of the degeneration lies within the glomeruli, which are visible in the cortex, resembling tiny dewdrops. By pouring the aqueous solution of potassium iodide over the surface of the kidney, one can see the brown points representing the glomeruli and the interlobular arteries presenting themselves as fine streaks.

Symptoms.—The onset of the disease is usually not marked by any symptoms at all. We always find up to 3% albumin, *globulin appearing in much larger quantities than with any other kidney affec-*

tion. The casts are particularly broad and hard, often waxy, covered with kidney epithelia. Dropsy is very frequent. The other clinical symptoms, such as nausea, lack of appetite, etc., appear very late. The disease may last for many years, and be well borne. Death occurs usually by the amyloidosis of the liver and intestines (diarrhœa, intestinal hemorrhage). The *diagnosis* can be made only from the simultaneous affection of the spleen, liver, and intestines. The *prognosis* is always fatal, for there has never been observed a case of amyloid kidney without grave affection of the other viscera.

VI. GUMMATA OF THE KIDNEY.

Gummata of the kidney affect mostly but one kidney. We find pea- to hazelnut-sized nodules in the cortex, associated frequently with III., IV., or V., and gummata of the brain, liver and pancreas. Out of 220 post-mortems on syphilitics, with 147 syphilitic kidneys, this lesion was found 7 times.

CHAPTER VII.

THE SPLEEN.

We distinguish:

I. ACUTE SPLENITIS.

This appears simultaneously with the lymphatic involvement in acquired syphilis, before the eruption takes place, and subsides with the disappearance of the latter. According to Haslund, we find it in 61.3% of cases of acquired syphilis and in 31.17% of cases of the congenital type. The pathology consists, in analogy with the splenic tumor of other infectious diseases, of the hyperplasia of the lymphoid elements of the spleen.

II. INTERSTITIAL SPLENITIS.

Interstitial splenitis, usually co-existing with syphilis of the liver, kidneys, and other viscera, is characterized by the hypertrophy of the stroma of the spleen, whereby the latter attains an increased consistency, becoming tough, fibrous ("fibrous induration"). On cutting through the spleen, one sees the strands of the stroma protruding in

form of radiant whitish strips, while the capsule often shows thickening and adhesions ("peri-splenitis").

Clinically, the enlargement of the spleen is missing, quite often, altogether. Pain in the region of the spleen on pressure as well as on deep inspiration or moving about is also absent. The blood shows, not infrequently, microcytes, poikilocytes and pigment masses.

III. GUMMATOUS SPLENITIS.

The gummatous splenitis is a very rare affection.

IV. AMYLOID SPLEEN.

The amyloid spleen is encountered more frequently than the amyloid liver, and found usually in the late periods of the acquired as well as congenital syphilis, co-existing with interstitial splenitis. The principal forms are: (1) the *Sagospleen*, in which one finds the normal whitish follicles replaced by light brown nodules resembling sago granules; (2) the *Baconspleen*, which, owing to the hyalin degeneration, lends to the pulp a hyalin, lard-like sheen and frequently is four to five times the normal size. Clinically, one can usually palpate the spleen as a resistant tumor, the edge of which is dull. All other clinical symptoms, such as hemorrhages of the stomach, ulceration of the intestines,

diarrhœa, etc., cannot be considered as being characteristic exclusively of splenic trouble.

CASE 13.

Mr. W. J.

38 years of age.

July 23rd, 1904.

Patient claims to have enjoyed perfect health up to four years ago; admits excessive potus (whiskey and beer since sixteen years of age). Eighteen years ago he had an indurated chancre, which healed after three weeks. Eight years ago he had a good many sores in mouth and larynx, and hoarse voice. Ten years ago he acquired chancre for the second time. The last three years he has not indulged in any alcoholics. *Six months ago* he had *dropsy*, could sleep only in sitting position. He feels drowsy, stupid, dizzy. When he urinates, he complains of pain in the right kidney region. He is constipated and takes pills which move his bowels, as well as make him void more urine. He complains of headache over his right eye; is very irritable; had *dropsy*, lasting for 7 or 8 months. *A year later it came back*, lasting for 3 or 4 months. Since that time, it has not returned, but his hands, his face, and his feet are always more or less swollen. As soon as he drinks water in the morning he has to vomit. Suffers with vomitus matutinus almost daily.

Liver.—Dullness begins at the 4th rib in the

mammillary line, 7th rib in the axillary line; left lobe covers the epigastrium down to two fingers' breadth above the umbilicus.

Heart.—Apex: visible broadly throbbing in 6th intercostal space, anterior axillary line; lower sternum pulsating and dull; second aortic sound accentuated.

Right kidney-region very sensitive to pressure.

Lungs.—Normal.

Glands.—All of them *hardened, swollen, indolent*.

On the dorsum sulci coronarii a narrow, white cicatrix.

Urine.—3250 'c. c. in 24 hours; specific gravity 1006; pale yellow; opaque; normal odor; neutral; excessive albumin (*Esbach* 3%); indican traces. Sediment: Excessive pale and ill-shaped red blood corpuscles; numerous granular, hyalin and epithelial casts; numerous fatty casts; moderate fatty kidney epithelia.

Treatment.—Potassium iodide 15.0: 150.0 aqua; 3 teaspoonfuls a day; hot bath.

August 2nd.

The backache lessened, appearing only when not urinating for a few hours. Last week, patient had nausea and headaches but once. Urinates little; feels very tired and weak; appetite gone; sleeps well; bowels move every day; hands, face, and ankles edematous every night.

Urine.—Pale yellow; normal odor; neutral; 1008; excessive albumin; *Esbach* 2%.

Treatment.—The same.

August 9th.

Patient complains of general weakness; shortness of breath on walking; soreness in stomach; swelling of legs; appetite fair; no headaches; occasional nausea; no backache; bowels move every day.

Liver.—Left lobe smooth, *reaching only to 4 fingers' breadth above navel; very sore to touch.*

Spleen.—Not palpable.

Urine.—1¾% albumin (*Esbach*).

Patellar Reflex.—Present on right and left side.

Pupillary Reflex.—*Absent on the left side; very indistinct on the right side.*

Treatment.—Discontinued iodide; started on inunction treatment with mercury ointment; 3 gram pro die.

August 15th.

Legs and ankles do not bloat any more in evening; soreness and swelling from abdomen mostly gone; once in a while numb sensation from knees down, which passes away when standing up or moving about; gets out of breath quickly; still tired; appetite not very good; pains in head gone; feeling tired; back does not ache as it used to, though on standing up for a longer time it feels weak.

Pulse.—100; regular; *tension high.*

Liver.—Edge palpable in the middle of distance between ensiform process and umbilicus. *Pupils:* Right reacts; left side no reaction.

September 5th.

Urine.—Pale; turbid; acid; 1008; *Esbach* $\frac{1}{3}\%$.

Patient feels much better; feels more energetic and stronger. The eyelids do not swell any more nor do the ankles. He does not complain of the shortness of breath he used to have, though gets out of breath on fast walking; still weak in his back; appetite not very good; patellar and pupillary reflexes unchanged.

Liver.—The same.

Treatment.—Inunction continued; potassium iodide resumed.

September 13th.

Urine.—2% *Esbach*.

Patient complains of diarrhœa the last 5 days; crescent-shaped ulcers back of his left lower molar tooth; feels weak; tired; back aches. *Pupils:* *Right, normal; left, absent.* *Patellæ:* Normal. Pulse: 96; regular; tension lower.

Liver.—*Left lobe still somewhat enlarged.*

A few months later, while I was abroad, the patient's death was reported to me.

CASE 14.

Mr. W. L.

42 years of age.

June 24th, 1907.

Patient noticed diarrhœa, which was relieved by medicine. He had a similar spell of colic and diarrhœa about a year ago, which lasted at that time about one month. If he takes a glass of milk, he immediately gets cramps and four or five liquid, greenish bowel movements a day. Appetite is good. No vomiting. He never smoked, never drank.

A year ago he had a severe anemia, went South, and grew fat.

Status.

Patellæ, pupillæ: Normal. *Lungs, heart:* Nothing abnormal.

Liver.—Upper border beneath the 4th rib in mammillary line, the 6th rib in axillary line, and reaches three fingers' breadth beyond the rib arch, with a dull, hard edge; not painful to touch. *Spleen not palpable.*

Urine (Passed in office).—Brownish red; turbid; acid; 1018; 2.3% albumin; no sugar; *bile positive; very excessive indican.* Sediment: A few kidney epithelia, stained yellow from bile pigments; numerous *broad hyalin casts*, covered with kidney epithelia; a few red blood corpuscles.

Blood.—80% Sahli; Red blood corpuscles look

swollen and pale; a few poikilocytes; very numerous blood platelets, 65% polynuclear neutrophile leucocytes; 1% polynuclear eosinophile leucocytes; 24½% lymphocytes; 4½% large mononuclear leucocytes; 4½% transition forms.

Feces.—Clay colored, syrupy consistency; very offensive odor; excessive fat acid crystals; excessive fat globules; a few amyllum bodies; mucin considerable.

Urine (Bottle).—1020; dark brown; turbid; acid; *excessive indican*; no sugar; considerable albumin; urea 1.4%. Sediment: A few red blood corpuscles; considerable kidney epithelia; a few squamous epithelia; considerable moderately broad *hyalin* casts; some moderately broad *granular* casts.

June 25th.

Feces still liquid, brown; no cramps; three bowel movements a day.

June 26th.

Patient had only one stool; feels very well; a sty on the palpebra.

Treatment.—(Ichthalbin continued.) Pancreatin 0.3 three times a day.

June 27th.

No stool all day; no cramps.

June 28th.

No stool yet; feels very well.

Treatment.—Cascara.

July 1st.

Patient had yesterday after taking one teaspoonful Carlsbad, a formed, light-colored bowel movement; no pain; good appetite. Pulse: 72. Tonometer: 104.

Treatment.—Carlsbad—pancreatin, arsenferratose.

July 5th.

Appetite good; feels well; stool formed, somewhat dark. Scleræ somewhat icteric.

Liver.—Dullness beginning on the 4th rib in the mammillary line and the 4th rib in the axillary line, on posterior surface of thorax 4 fingers' breadth below angulus scapulae, the lower edge reaching 2 fingers' breadth below the rib arch; no hydrothorax; no ascites.

Urine.—Dark, yellowish foam; acid; 1020; no sugar; *traces bile*; *traces indican*; considerable albumin. Sediment: Moderate number red blood corpuscles; numerous leucocytes; numerous kidney epithelia; moderate squamous epithelia; a few hyalin casts; a few medium wide granular casts; *moderate bile pigments*.

July 11th.

Weight 169 pounds; has gained 4 pounds. Patient has every day, 4 or 5 hours after taking Carlsbad, a formed, dark brown bowel movement without any pain; feels very well; passes 18 ounces urine a day.

Urine (Passed in Office).— $4\frac{1}{2}$ ‰ albumin; dark amber; slightly turbid; acid; traces indigo-carmin. Sediment: A few medium wide granular casts; moderate leucocytes; a few hyalin casts covered with kidney epithelia, which contain some light yellow bile pigments; no red blood corpuscles; a few squamous epithelia.

Liver.—The same.

Treatment.—The same.

July 29th

Patient had a spell of diarrhœa with cramps for one week; taking former treatment; it subsided; liver unchanged.

Urine (Passed in Office).—Dark amber; slightly turbid; traces albumin; *excessive indigo-carmin*. Sediment: Excessive pus corpuscles; *hyalin* casts, yellowish tinged, and *epithelial* casts of various width.

Treatment.—The same.

July 31st.

Blood.—85% Sahli; a few poikilocytes, leucocytes not increased; 52% polynuclear neutrophile leucocytes; 2½% polynuclear eosinophile leucocytes; 40% lymphocytes; 3% large mononuclear leucocytes; 1½% transition forms; 1% basophiles.

August 7th.

Weight 164 pounds; one bowel movement a day; dark brown, formed; good appetite; no diarrhœa.

August 13th.

Liver.—Upper edge at 5th intercostal space in the mammillary line; 7th rib in the axillary line; *left lobe dull and tumorlike, extending downward four fingers' breadth.*

Urine (In Bottle).—1015; 5 ‰ albumin; 1% urea; brownish yellow; acid; *traces* bile; *moderate* indican. Sediment: A few red blood corpuscles; excessive kidney epithelia; numerous hyalin casts; a few granular casts.

Treatment.—The same.

August 16th.

Weight, 168 pounds; good appetite; occasional fullness in stomach after eating. Pulse: 80. Tonometer: 85.

Treatment.—The same.

September 6th.

Weight, 170 pounds; feels very well; every day a dark brown, formed bowel movement; has taken no medicine for one week; liver the same.

*Urine (In Office).—*Brownish-red; 1020; acid; *yellow foam*; albumin $12 \frac{0}{100}$; urea; 1.9%; *sugar positive; excessive bile*. Sediment: *Excessive hyalin, granular and epithelial* casts; excessive kidney epithelia; a few squamous epithelia and numerous leucocytes.

No ascites. *Spleen not palpable.*

Treatment.—The same.

January 8th, 1908.

Weight, 178. Patient feels very well; complains, however, of having "albumin in his urine," as some physician informed him. His bowels move twice a day, of dark color, soft. His appetite is very good. He has no pain, except some *rheumatic pain in his legs, which are edematous up to the knees.*

*Urine (Passed in Office).—*Dark amber; yellow foam; marked traces bile; no indican; no sugar; *excessive albumin*. Sediment: Moderate leucocytes; moderate kidney epithelia; a few squamous epithelia; a few hyalin casts; moderate medium wide granular casts; moderate *bile pigments*.

Liver.—Upper edge 4th rib in mammillary line, 6th rib in axillary line; lower edge two fingers' breadth beyond rib arch, dull.

Spleen: Not palpable. *Heart:* Nothing abnormal.

Treatment.—Diuretin 1,0 five times a day; bed-rest.

January 11th.

Patient passes much more urine; feels well; edema disappeared.

January 13th.

Patient incidentally remarks that the rheumatic aching in the legs has disappeared since the swelling has gone. However, he adds, *he has a place on the leg which aches mostly at night, and often keeps him from sleeping.* On closer inspection, I discovered a *gumma of hazelnut size on the right tibia to be the point that aches.* Then and there I decided that the *hypertrophy of the liver as well as the nephritis was of a specific nature,* and prescribed tentatively sodium iodide, 15 grains a day. He has passed 52 oz. urine in the last 24 hours.

January 15th.

Patient has had no pain in the tibial gumma, and *for the first time for ten nights has slept undisturbed by aching.* On closer inquiry the patient admits that he had a few small pimples on his membrum about 18 years ago and to have treated, about 15 years ago, a sore throat, with mercury.

January 17th.

Urine (Bottle).—Reddish brown; acid; 1025; excessive *albumin* 8 ‰; traces bile; iodine positive. Sediment: A few red blood corpuscles; moderate leucocytes; numerous kidney epithelia; a few squamous epithelia; a few hyalin casts; a few broad epithelia.

January 25th.

On further inquiry, patient called my attention to numerous *bumps* which he has noticed for two or three years *on his skull*, painful to touch. He has consulted many doctors about them. Once they were pronounced of a rheumatic nature at a consultation held during the time of the meeting of the American Medical Association in Portland. He called my attention to the fact that these *bumps*, as well as the copper-red, infiltrated *pustule* which showed on its top a craterlike depression and had been visible for many months on the left side of *his nose*, have disappeared since taking the iodides. He claims to sleep now better than for years.

Urine (Passed in Office).—Is much clearer; dark brown; foam white; moderate indigo carmin; acid; *albumin* 15 ‰. Sediment: Moderate hyalin casts; moderate *bile* pigments; a few squamous epithelia; moderate kidney epithelia.

February 7th.

Patient admits that the gummata on his head; after softening, have well nigh disappeared, as did the gumma on the tibia.

Pulse: 68. *Tonometer:* 95.

Urine (Passed in Office).—Dark amber; much lighter than before; *excessive albumin*; excessive iodides; traces bile.

I decided to put the patient on a thorough course of mercurial inunction, giving at the same time natrium iodatum 25,0: 150,0 aqua, a teaspoonful three times a day.

February 13th.

Patient feels very well, except for the slight folliculitis, the product of inunction.

February 17th.

Urine (In Bottle).—Dark amber; turbid; acid; *albumin*: *Esbach* $2\frac{1}{4}$ ‰; iodides positive; no bile.

February 22nd.

Urine.—Amber; clear; white foam; acid; no bile; no indican; *albumin*: *Esbach* 3. *Sediment*: Moderate pus corpuscles; a few squamous epithelia; a few narrow granular casts; a few broad casts covered with kidney epithelia.

February 27th.

Patient's weight is 178 pounds, which means 16 pounds increase since starting with the treatment; has considerable appetite; *sleeps well, better than ever before*; feels very well.

Lungs.—Normal.

Heart.—Scraping systolic sound in third left intercostal space.

Liver.—Dullness begins at the 5th rib in the mammillary line, at the 7th rib in the axillary line; *edge* is hard, dull; extends two fingers' breadth beyond the rib arch, *apparently lobular*.

Spleen.—Not palpable. Moderate edema *tibiæ*, crista of which appears *uneven*. The *tophi* on his skull appear depressed after having been softened before. Bowels move every day.

Treatment.—After having had two daily inunctions with 33% mercury vasogen for three days, patient starts in on inunctions with 50% mercury vasogen; sodium iodide continued.

March 9th.

Patient somewhat salivated.

Urine.—Dark; amber; turbid; acid; 1015; albumin: *Esbach* 9 ‰. Sediment: Considerable leucocytes; considerable kidney epithelia; a few hyalin, a few narrow granular casts.

March 11th.

Liver: Unchanged. *Heart:* Sounds hardly audible. Still edema of the legs. No hydrothorax.

Between March 15th and July 15th patient, while abroad, consulted Prof Manaberg in Vienna, Prof. Ehrman in Vienna, Dr. Emil Pfeifer in Wiesbaden, *all of whom concurred in the diagnosis of specific trouble.* He continued for 6 weeks more the inunction treatment and drank for 4 weeks afterwards the iodide water in Hall, Austria. Came home end of July, 1908.

August 4th.

Urine.—Dark amber; turbid; acid; 1020; albumin: *Esbach* 1.0; no sugar; traces bile; no indican. Sediment: A few red corpuscles; moderate leucocytes; moderate kidney epithelia; a few medium sized granular casts; some bile crystals; a few fibrin shreds.

Patient feels very well.

Lungs and heart show normal conditions. Patellar reflex somewhat exaggerated.

Liver.—Dullness starts at 5th rib in mammillary line; at 7th rib in the axillary line; *edge* in the mammillary line hard and dull, reaching beyond the rib arch *only one finger's breadth.*

Patient has had iodides for the past 4 months. *The Wassermann test* made at this time was *positive.*

October 12th.

Urine.—Dark brown; yellow foam; clear; acid; marked traces bile; no indican; $1\frac{1}{2}\%$ urea; 1022; *Esbach* 6.25. Sediment: Urates, moderate leucocytes; moderate cuboidal epithelia; a few hyalin, a few medium sized granular casts.

October 13th.

Patient weighs 191 pounds.

Liver.—Dullness beginning 4th intercostal space mammillary line; 6th rib in the axillary line; *edge* somewhat dull, reaching just *one finger's* breadth beyond the rib arch.

Heart.—Occasional doubled systole.

November 13th.

Patient complains of eructation for the last 2 weeks after eating luncheon and dinner; not in the morning; bowels move every day; slight edema of the legs.

Liver.—Dullness begins on the 5th rib in the mammillary line; at the 6th rib in the axillary line; the *edge not reaching beyond the rib arch*, though the *left lobe* itself is *dull*.

Patient has been taking all this time the bottled iodide water from Hall.

Treatment.—Discontinued Hall water; substituted Carlsbad water.

November 30th.

Urine.—2¼ quarts in 24 hours; alkaline; amber; white foam; *albumin*: 1¼ *Esbach*; no indican; marked traces bile. *Sediment*: A few kidney epithelia; a few hyalin casts.

February 24th, 1909.

Patient feels very well.

Lungs and Heart.—Normal.

Liver.—Dullness begins at 5th *intercostal* space; lower edge not reaching beyond the rib arch; the left lobe somewhat hard, but not enlarged.

Urine (Passed in Office).—Eight ounces; amber; clear; acid; 1008; *albumin*: 1 *Esbach*; no indican; no bile. *Sediment*: A few moderately wide granular casts; considerable pus corpuscles; moderate kidney epithelia.

CASE 15.

Mrs. S. L.

41 years of age.

July 27th, 1909.

Has been a widow for the last four years. Has two grown stepdaughters from her late husband's first marriage. She herself had *five children* by her late husband, *all of whom died*. The first two were twins, one died immediately, one after 14 hours. The next baby died within 14 hours. The fourth child lived three days. The fifth child lived

27 hours. She has been married ten and one-half years. Her *husband* died of *paralysis*. (*He was a widower for 4 years before he married her.*) Two weeks ago she took sick with palpitation in the left side, reaching from the navel to the left costal margin; can feel it most of the time, sometimes severely, accompanied by dizziness. Her menstruation, which lasts one week, is painless, very profuse, always associated with headache in both temples and pressure on top of her head; vomiting occurs with it and lasts from one to three days. She has no fluor at present; had it, however, for the last six or seven years. She feels lifeless and weak when the menstruation comes on. Has no trouble with urination. At times she is constipated. For the last two years she has had a sensation as though the nerves of her whole body were pulled together. The spell in the left side, mentioned above, she also had one year ago; it lasted four weeks; again, seven years ago, it lasted ten days. Her appetite is very poor; she has not eaten anything for two weeks; she claims that food cannot "go through" during the spells. She has no bowel movements. This *spell started with vomiting and diarrhœa*; it lasted for one and one-half days, whereupon she ceased eating. She claims the food would not remain in the stomach. She has taken no cathartics. She had to urinate a great deal at that time.

Status.

Lungs: Normal. *Heart:* *Systolic murmur over aorta.* *Liver, kidneys, spleen:* Nothing abnormal.

*Urine (Catheter).—*Light amber; turbid; 1008; acid; excessive albumin: *Esbach* 0.25; marked traces indican. *Sediment:* Excessive leucocytes; moderate kidney epithelia.

Blood.—65% Sahli; 3,400,000; 61% polynuclear neutrophile leucocytes; 3% transition forms; 1% polynuclear eosinophile leucocytes; 31% lymphocytes; 1% large mononuclear lymphocytes.

Wassermann test positive.

Treatment.—Mercury inunctions, iodofertrate.

August 16th.

Patient suffered with severe diarrhœa, which started *before* she commenced the inunctions. She feels very weak; no appetite; sleeps well, *no headache*; complains of great pain in the intestines, especially before the bowels move.

Treatment.—Discontinue inunctions and iodofertrate; hot applications and diet, tannalbin.

August 30th.

Patient suffers with diarrhœa; tenesmus for the last three days; no appetite; tongue coated.

Pulse: 120.

September 7th.

Patient complains of sharp, shooting pain in the right chest and shortness of breath, especially since having taken sick five weeks ago with diarrhœa, headache and vomiting; no diarrhœa at present; on walking soreness in the calfs; pains in the wrists and finger joints; inunction treatment resumed; for the last two days *when lying down*, for one or two minutes, *she gets out of breath*; bowels move every day.

Pulse: 82.

August 27th.

Urine.—Acid; *considerable albumin*; considerable indican.

September 8th.

While patient was sitting by the fire-place, she was seized with nausea and a pain in the left side of the chest and below the left shoulder; the finger nails turned blue; she could not breathe; the pulse was hardly noticeable; she had to go to bed; the spell lasted two minutes; she took camphor drops. She had resumed yesterday the inunction and the iodoferratose; she could take one teaspoonful only, as it made her "sick at her stomach." This morning she feels well again.

September 9th.

Urine.—Acid; turbid; pale yellow; excessive albumin; considerable indican. Sediment: Excessive pus corpuscles; moderate kidney epithelia; *one waxy cast*; excessive streptococci.

Treatment.—Tincture strophanthi, 10 drops three times a day.

September 10th.

Beginning six days ago, patient had a spell of diarrhoea and paroxysms of abdominal colic, which lasted until yesterday. The stools are mushy; tenesmus persists; no appetite; 7 days ago *towards evening* the patient was seized with a pain in the region of the heart and the left shoulder blade; turned blue; dark before the eyes; *could not breathe*; pulse was not noticeable; at present: a sharp pain in the *right axillary* region; does not urinate sufficiently; six evenings ago she had a sudden pain in both eyes as if the nerves had been twisted; *she could not see for a moment*.

Pulse: 120. *Respiration:* 20. *Arteries beaded.* *Nocturnal pain in the legs and head.* Sometimes nose bleeding. No vomiting, but nausea.

September 19th.

In the last 24 hours patient passed 3 oz. urine only. Respiration stertorous. No pain. No vomiting.

This is a case of specific arteriosclerosis with nephritis and uræmia.

A few days later exitus.

CHAPTER VIII.

THE PANCREAS.

Rokitansky, in his book on pathologic *anatomy*, was the first man to mention that fibrous degeneration of the pancreas occurs simultaneously with the more frequent syphilitic lesions of the liver, with or without gummata. It is, as a rule, a hypertrophy of the interstitial connective tissue, originating again from the blood-vessel walls, appearing in foci, affecting mostly the head of the pancreas. By exerting pressure on the glandular tissue by thickening and hardening, it produces atrophy of the gland. Simultaneously there may occur gummata.

With *acquired* syphilis this lesion is one of the rarest of diseases. With *congenital* syphilis, however, Birch-Hirshfeld found this disease in 23% of syphilitic post-mortems. Clinically, we cannot consider the presence of fat in the stools as characteristic, inasmuch as lesions of the liver as well as the biliary ducts and other diseases may cause the same fatty stools; nor can we consider glycosuria characteristic of the disease, because the latter has been observed even with entirely normal pancreas in syphilitic people, and, on the other hand, has been missing in cases of total destruction of the

pancreas (Dieckoff, Hausemann, Litten, Ziehl, and others).

It is first of all, so Neumann says, conspicuous, that the number of cases of luetic diabetes is very small in comparison with the large number of syphilitic lesions of those organs which research has recognized as the chief etiologic factors in diabetes, to wit: abnormal conditions of liver, brain and pancreas.

This fact has induced Cantani to deny any connection between diabetes and syphilis. On the other hand, authorities like Jacksch, Leudet, Naunyn, Lecorché, claim syphilis to be one of the causes of diabetes. Lecorché explicitly points out that diabetes may be caused by the mere syphilitic diathesis without any specific lesion of the brain.

Leudet observed one case of diabetes in brain syphilis.

Von Frerichs reports 3 cases of diabetes ex lue. The same is reported by Rezek, Zimmer, Blau, Gowers, Feinberg (4 cases).

I wish to call attention to one case of brain syphilis (the first one in Chapter I), in which I repeatedly found sugar in the urine. I furthermore wish to call attention to the following case of nephritis with retinitis albuminurica and diabetes, in which the Wassermann test has proven positive in spite of a negative history. The peculiar feature of this case is that merely moderate regulation as to diet made the sugar disappear from the urine every time.

We may consider syphilis to be the cause of a diabetes case, especially if we can exclude a hereditary endowment, as well as other causes, and if the sugar disappears on antisyphilitic treatment.

CASE 16.

Mr. M. J.

45 years of age.

September 3rd, 1907.

Five or six years ago patient became ill. He was treated afterwards for quite a while for diabetes. Dr. M. found sugar and albumin in the urine, put him on a certain diet, whereafter the sugar disappeared, but on milk diet it came back again. The last two months he has eaten promiscuously. Patient noticed blurring in his eyes, more on the right than on the left side. The oculist diagnosed *retinitis albuminurica*. A year ago he had heartburn, constipation.

Urine (Passed in Office).—Amber; clear; contains 1% uric acid; 1021. Sediment: *Considerable serum- and nucleo-albumin; sugar 3%; no indican; urea 0,8; casts: hyalin, granular and epithelial moderate; excessive rhombi of uric acid and a few oxalate octahedrons.*

Urine.—(Patient has followed the diet for the last week, not eaten any bread nor meat.) Brought in bottle. Dark amber; acid; excessive *serum- and nucleo-albumin*; 1020; *no sugar; Esbach 1½; moderate indican; urea 1%; no diacetic acid; sediment*

moderate; a few leucocytes, numerous cuboidal epithelia from kidney; moderate medium sized hyalin and granular casts, a few epithelial casts; excessive uric acid rhombi.

Lungs, heart: Nothing abnormal.

Liver: Edge sharp, one finger's breadth beyond rib arch.

Reflexes: Patellar: Absent. Pupillary: Normal to light.

Spleen, kidneys: Not palpable.

Pulse: 100. Blood pressure: 135.

Advice given: Carlsbad water, diet for diabetes, two hours' exercise daily.

November 23rd, 1908.

Patient complains sometimes immediately after meals, or 3 to 4 hours afterwards, of gas in the epigastrium, pressing against the ribs; eructations sometimes for 3 to 4 hours, of tasteless gas. He had one vomiting spell of very sour liquid. Tongue not coated. He takes Carlsbad water and occasionally mixture of Magn. Natr. Bellad.

December 2nd, 1909.

Patient has followed the diet strictly for 9 days, complains of "*stomach only*." The gas pains him 3 to 4 hours after eating, pressing against heart and making him short of breath. He wishes to have something "to get stronger."

Urine (Brought in bottle).—Amber; white foam;

clear; acid; *excessive albumin*: *Esbach* $1\frac{3}{4}$; *no sugar*; traces bile; 1020; *very excessive indican*. Sediment: 1% brick, considerable leucocytes; a few squamous epithelia; a few hyalin casts; a few granular casts; excessive uric acid rhombi and hexagons or octahedrons of oxalate of lime.

Pulse: 96. Blood pressure: 115.

Advice given: Regulin, Squibbs effervescent antilithic.

January 7th, 1909.

Patient complains of belching and constipation.

Urine (Bottle).—Strongly acid; 1017; marked traces albumin; no sugar; traces bile; no indican. Sediment: Leucocytes, a few cuboidal and squamous epithelia.

January 11th, 1909.

Patient denies any specific history. Has one boy 17, and one girl 13 years old. *Wife* was pregnant not long ago; *miscarried once*. Gonorrhœa admitted by patient.

Urine (Office).—Excessive serum-albumin; traces nucleo-albumin; no sugar; very acid. Sediment: Moderate medium sized granular, hyalin and a few epithelial casts; moderate cuboidal kidney epithelia; moderate biscuit forms of oxalates.

Order: Diet for nephritis.

February 17th, 1909.

Patient still complains of constipation. Appetite good. Sleeps well.

Urine (Bottle).—Slightly acid; no sugar; albumin $1\frac{3}{4}$ Esbach; specific gravity, 1030; indican excessive.

June 26th, 1909.

Patient had a great deal of worry lately. Lost four of the eight pounds, which he had gained on his trip east. He cannot see near, everything blurred. Cannot count fingers one meter distance.

Patellar reflexes absent. Rhomberg absent. Pupillary reflexes normal.

He ate while in the East *everything*, because he felt well. *Denies syphilis.* Admitted interrupted coitus for many years.

Urine (Passed in Office).—1015; acid; albumin $1\frac{1}{2}$; sugar $3\frac{1}{4}\%$; considerable indican. Sediment: A few leucocytes; moderate cuboidal (kidney) epithelia; excessive uric acid rhombi.

Order: Diet for diabetes, Carlsbad and iodnatrium.

June 29th, 1909.

Urine (Bottle).—1015; acid, aromatic; excessive albumin $1\frac{1}{3}$; no sugar; considerable indican. Sediment: A few leucocytes and a few medium sized hyalin casts; a few kidney epithelia.

July 2nd, 1909.

Urine (Bottle).—1015; acid; albumin 2; moderate indican; no sugar. Sediment: Excessive cuboidal and a few cylindrical kidney epithelia and a few medium sized granular casts.

Dr. DeWitt Connell made the following report:

Both eyes show an old chorioretinitis albuminurica. Atrophic spots containing irregular patches of pigment.

CHAPTER IX.

THE STOMACH.

Neumann claims that well-nigh 20% of the cases of round ulcer of the stomach occur in syphilitic individuals, and should not be considered as a mere coincidence in Lues.

Fournier relates in the *Academie De Medicine*, 1898, two very interesting cases of syphilitic stomach lesions which I cannot refrain from quoting, as the case which I am myself reporting later on shows some resemblance to these.

CASE A.

Thirty years ago he treated a singer of a *café chantant*, who suffered with *rupia syphilitica* of her back. The same healed quickly. Ten years later, she called Fournier, and he found her in an apparently dying condition, a basinful of blood next to her bed. He was told that for the last 3 or 4 months she suffered with "blood vomiting" in spite of treatment for ulcer of the stomach. He prescribed potassium iodide. The effect of the medicine was miraculous. Rapid cure. Six or seven years later, she came again to Fournier, complaining that, while in Italy, the hemorrhages had appeared again. The

physicians, however, refused to give her potassium iodide, claiming it would mean death to her. Fournier again prescribed it, and miraculous cure followed.

CASE B.

A Russian, suffering with syphilis, vomits blood. On specific treatment, syphilis and vomiting cease.

The etiology of the hemorrhages is found in the syphilitic arteritis of the mucous lining.

Wagner and Klebs claim that all ulcers of the stomach appearing in syphilitics originate from gummata, while Galliard and Mauriac deny this.

Jacksch found in 2,330 post-mortems, ulcers or ulcer scars 113 times, which means in 4.8%.

Considering that endarteritis, lessened hemoglobin and alkalinity of the blood, increase and destruction of leucocytes with consequent capillary thrombosis, and reduced vitality of the mucous lining are etiologic factors of ulcer of the stomach, and at the same time very frequent occurrences in syphilis, one cannot be surprised to find Neumann's contention correct, though Osler claims that syphilis of the stomach is an extremely rare disease.

As to the symptoms, course, and outcome of syphilitic stomach ulcers, there is not much difference between syphilitic and non-syphilitic ones. One might mention the *nocturnal appearance of gastralgiæ* in syphilitics.

In cases where other symptoms of syphilis are present, and other etiologic factors of a constitutional nature can be excluded (such as chlorosis, tuberculosis, alcoholism, intense "heat" or "cold" influence upon the mucous lining; stomach, heart, and kidney lesions already existing before the syphilis was acquired; arterio-sclerosis) we might make a diagnosis of syphilitic ulcer of the stomach though not with any positiveness.

As to the prognosis, it is the same as with non-syphilitic ulcers. The cure has been effected with antisymphilitic therapy much more quickly than with dietary treatment in syphilitic ulcers.

The consequences after clinical cure, as stenosis of the stomach and chronic gastritis, are the same as with non-syphilitic ulcers. Profuse hemorrhages—with the exception of Fournier's case—have not been observed.

CHAPTER X.

THE RECTUM.

Henry James Johnson was the first man to give an explicit description of the ulcers of the rectum, which are the most important syphilitic lesions of the same. (*The London Med. Chir. Review*, 1835.) They are more frequently found in women than in men, which fact may be explained by the difference of the natural and unnatural sexual relation, as well as by the difference in the anatomic relation of the sexual organs to the rectum in both sexes.

We distinguish:

I. THE SYPHILITIC CATARRH OF THE RECTUM.

This may be either primary or *secondary*; the latter in *most cases*. It then is an accessory to ulcers, rhagades, ulcerating papulæ, which reach from the anus into the rectum, or to ulcerating gummata of the rectum and sigmoid flexure.

The SYMPTOMS are chronic purulent discharge from the rectum, feeling of pressure, itching, and fullness in the rectum, tenesmus.

The DIAGNOSIS is made by the finding of a chronic

purulent *rectal* discharge in an individual having the symptoms of late syphilis or giving a syphilitic history without any other cause for the discharge.

The PROGNOSIS in most cases is unfavorable.

II. THE SYPHILITIC ULCERS OF THE RECTUM.

These may be,

(a) *Ano-rectal ulcers*, originating from *papules* or *plaques*, which latter Lang has observed in 14% (!) of all syphilitic cases. They are usually crescent-shaped, with grayish white bases and hemorrhagic suffusions. The boundary, as well as the base, is tough and thickened.

(b) They originate from *gummata*, and then are usually *localized above the sphincter*, are round and sharp edged, the mucous lining between projecting in the form of strips and rolls. If they happen to be circular they lead to considerable stenosis of the rectum. They may originate from the softening and necrosis of peri- and para-rectal *gummata* also.

The SYMPTOMS may be entirely overlooked in the beginning of the trouble. Later they cause burning in the anus, imperative defecation, tenesmus, prolapsus, obstinate constipation, fever, involuntary defecation owing to the paralysis of the sphincter muscle (brought about by the destruction of the muscle fibers).

It is *noteworthy that syphilitic rectal ulcerations*

are frequently the only manifestations of syphilis which make the patient seek medical aid (see the case I am reporting).

The DIFFERENTIAL DIAGNOSIS will have to be made between:

(a) *Dysenteric Ulcers*.—These are usually accompanied by profuse diarrhœa, colicky pain throughout the abdomen, and the strictures resulting from them are localized farther up, and only rarely are circular.

(b) *Tuberculous Ulcers*.—These are spread all over the colon, ileum, and jejunum, generally co-existing with tuberculosis of the lungs and joints.

(c) *Carcinomatous Stricture*.—This, again, is situated higher than is the syphilitic stricture. The mucous lining is usually tough, nodular, not smooth, as in case of syphilis. Furthermore, we find, very early, adhesions to the neighboring organs in carcinoma.

PROGNOSIS.—Only the very early ano-rectal ulcers and the ulcers which do not reach deeply into the rectal wall may be cured. The ulcers of late syphilis, however, are usually incurable.

CASE 17.

Mrs. Fl. J. Divorced.

24 years of age.

August 30th, 1909.

Ten weeks ago was operated upon for hemorrhoids (!!!), which bled. She thinks that she now

has "a fistula." Has been *constipated* for four years. Thinks that her bladder is not right, either, and complains of a burning sensation periodically. In the last week, she had to urinate frequently; has had these spells before also. Thinks her blood is out of order. She has been married for seven years. Never conceived. The last three years divorced. No cough. Occasional sore throat. Very nervous. No appetite. No sleep. Occasional headache. Four years ago both ovaries removed. No menstruation since. One and one-half years ago a bilateral bubo operated upon. Six months ago, while at the Hot Springs, inunction treatment for two weeks; discontinued, however, on account of gingivitis. Six years ago hemorrhage from the lungs. The last eight days, numerous ulcers, covered with thick scabs, on the back of her scalp. The left occipital glands swollen.

Status.

Lungs, heart: Normal. Spleen, liver: Normal. Pharyngitis purulenta. *Glands*—axillary, cubital, neck: hard, small, indolent. Numerous lentil-sized leukoderma spots on the sides and back of neck. On the left occiput and parietal side of head a few, lentil- and bean-sized, round ulcers, with crater-like edges and covered with thick yellow scabs. Hair not breakable.

Urine (Catheter).—1016; light amber; acid; turbid; no albumin; excessive indigo-violet. Sediment:

(Taken by catheter into sterilized tube) Consists of excessive pus corpuscles, which show excessive intracellular gonococci. *Urethral secretion*: Purulent; consists of excessive pus corpuscles and excessive intracellular gonococci.

Coloscopy: The whole rectum covered with granulating, lentil-sized or 5-cent-piece-sized, round ulcers which secrete bloody serum. At one place, 8 cm. above anum, the tube could hardly be pushed through on account of an *annular stricture*. *No hemorrhoids!!*

• *Wassermann test positive.*

Diagnosis.—Gonorrhœal cystitis; specific ulcers of the rectum and of the scalp.

Treatment.—Inunction treatment, urotropin.

September 11th.

Bowels move every day after starting my treatment for constipation. The headaches are better.

Treatment.—Added iodides.

September 21st.

No appetite.

October 4th.

The ulcers on the scalp, rapidly disappearing. No pain in rectum, though still somewhat mucous discharge.

October 11th.

Bowels move every day with oil injections. The ulcers on the scalp very much improved. Patellar and pupillary reflexes: Normal.

October 19th.

Patient must take oil injections every night, as the bowels otherwise do not move. There is still some mucous discharge from rectum. Ulcers of the scalp show healthy granulation. No appetite. Considerable discharge from vagina.

CHAPTER XI.

THE BLOOD.

Malassez knew, as early as 1886, that in the beginning of the syphilitic process the red blood corpuscles are diminished, while they increase in numbers in the later course of syphilis on treatment with mercury. If mercury be used very long, so Wilbuchewitch claims, the number of the red blood corpuscles again decreases.

Neumann, Gaillard, and others found that:

(1.) The *hemoglobin* percentage decreases from 15 to 30%, starting from the 40th day of sickness, continues to decrease with the eruption and the beginning of the mercury treatment, returns, however, to the normal standard after the disappearance of the eruption and after about 25 inunctions. Secondary cases, as well as tertiary cases, if not treated, show a constant decrease, sometimes down to 45%.

The case I am reporting has gone farther. It proved to be a case of pernicious anemia due to syphilis.

(2.) The *number of red blood corpuscles* is not affected at the time when the hemoglobin already has begun to decrease. We find a loss of red blood cor-

puscles later, only sometimes going down to $\frac{2}{3}$ of the standard. This proves that the *Spirochæta pallida* and its toxins attack the hemoglobin much earlier than they do the stroma of red blood corpuscles.

Under the influence of mercury the number of red blood corpuscles increases again.

(3.) The number of leucocytes increases, first among them the lymphocytes, owing to the glandular irritation. Then come the transition forms. If there be an extensive eruption, we find eosinophilia.

CASE 18.

Mr. G. G. M. Merchant.

40 years of age.

One and one-half years ago he had a sore mouth and tongue. Then, about four months ago, he suffered from *pain in the epigastrium*, beginning about two hours after breakfast, and lasting for 30 hours, until transferred to a hospital. Before entering the latter, he vomited about $\frac{1}{2}$ pint of blood. Four or five days later he *was seized in the middle of the night again* with a *severe pain*, which lasted for three or four hours. He was kept on peptonized milk for four weeks. After that he felt himself getting weaker and grew paler all the time. On walking fast, he suffered pains in the left side of his chest, left shoulder and arm, getting short of breath and having numbness in both hands. On rising from the horizontal to the vertical position, he becomes dizzy; on climbing stairs he well-nigh faints. Oc-

asionally he has heartburn, which increases the pain in the *sore spot underneath the processus ensiformis*.

When 17 years of age, he admits having had a specific infection, with breaking out of "boils on his back" and sores in the rectum. He had *no inunction treatment*, but he was treated internally. His wife, as far as he knows, did not have any miscarriages.

Status.—*Skin* pale; mucous linings pale; *lungs*: Nothing abnormal.

Heart.—Apex in the fifth intercostal, mammillary line; dullness reaching to right edge of the sternum; no murmurs.

Liver.—Not enlarged; not sensitive to touch.

Region of the ensiform process sensitive to touch the same as the left rib arch and the pyloric region.

Patellæ.—Exaggerated, especially the left one.

Urine.—(Passed in Office) Amber; clear; acid; traces albumin; marked traces bile; *excessive* indican; 1015. Sediment: Moderate number leucocytes; moderate squamous epithelia; spermatozoa.

Blood.—50% *Sahli*; 2,700,000; numerous *microcytes* and *poikilocytes*; *no megaloblasts*; 30% lymphocytes; 67% polynuclear neutrophile leucocytes; 2% large mononuclear leucocytes.

Leubes-test (four and a quarter hours).—Wash water is neutral; no free hydrochloric acid; no lactic acid. Sediment: Fine, white mush; excessive white connective tissue; mucin; numerous striated

muscle fibers; very few amylum bodies; a few saccharomyces; a few bacteria; no cocci; no sarcina.

Feces:

First (Meatless diet for three days).—Light yellow; soft scybala; excessive amylum bodies; iodine test positive; excessive leucocytes and cuboidal epithelia; biliverdin test positive; *blood negative*.

Second (After three days' Schmidt diet).—Moderate connective tissue; moderate fat acid needles; excessive lime salts; *no blood*; biliverdin negative.

Treatment.—Inunction.

October 31st.

Patient feels very weak. Shows gingivitis. Gargles only once a day.

- Urine (Bottle).—Moderate albumin; *very excessive* indican.

Treatment.—Tincture strophanthi, 10 drops three times a day.—Diet: Milk, eggs.

November 2nd.

Feces (After eating, on October 31st, milk, lamb chops, apple sauce, cornstarch, cream; on November 2nd, 2 eggs, milk, eggnog, olive oil, buttered toast, jelly, custard).—Excessive small mucin particles; no connective tissue; no meat particles; *no blood*; the mucin particles contain slightly red blood corpuscles; biliverdin: positive.

The patient feels very weak. Suffers from diarrhoea. Vomited several times; gingivitis.

November 4th.

Patient has 2 or 3 liquid bowel movements. Feels somewhat better. Gingivitis disappeared. Little discomfort in the epigastric region.

November 6th.

Patient feels better. Bowel movements were dark-gray, liquid (from bismuthol, which he is taking).

November 8th.

Diarrhœa seems better from taking bismuthol and tannalbin; patient feels stronger.

November 11th.

Patient is improving.

November 13th.

Appetite improved. No diarrhœa. One bowel movement a day. Complains of *pain in the left chest and left arm, especially at night.*

Heart.—Systolic murmur over *pulmonalis*.

November 16th.

Tincture strophanthus.

November 17th.

For the last two days the temperature rose to 101 and 102. In the morning vomiting and coughing.

Lungs: Nothing abnormal. *Heart*: Murmurs over pulmonalis; apex in the fifth intercostal, one fingers' breadth medial from mammillary line.

Feces.—Mushy gray.

November 18th.

Patient vomited once. Five grayish, hard bowel movements.

November 19th.

Feces (After two days' meatless diet): Dark olive green, liquid; normal odor; no connective tissue strings; considerable small flakes of mucus, which contains red blood corpuscles and leucocytes; a few bundles fat acid crystals; moderate lime salts; *no blood*; no biliverdin; slightly alkaline.

Patient states that *two years ago* he had the first spell of *blood vomiting and fever*; that *occasionally* he had *very dark black stools*, making him so weak that he had to lie down. He states that *in the last two years the anemia has grown worse*.

Treatment.—Arsycodile injections.

November 20th.

Temperature: 99. Vomited twice. Had 4 hard stools.

Urine.—Moderate albumin; slightly alkaline; *excessive indican*; no bile.

Treatment.—Calcium lactate 0,3, three times a day.

November 21st.

Salivation diminished. Temperature: 98 to 99. Very drowsy. *Coughing spells at night.*

November 22nd.

Temperature: 99½ all day. Vomited once. One mushy stool. Drowsy all day. Pulse: 100.

November 26th.

Blood.—28% Sahli; 1,800,000; excessive poikilocytes and microcytes; lessened money roll formation; a few macrocytes; *one megaloblast(!!!)*; two normoblasts; 42% lymphocytes; 4% large mononuclear leucocytes; 3% transition forms; 38% polynuclear neutrophile leucocytes; 1% polynuclear eosinophile leucocytes; 1% basophile and 11% *myelocytes*.

Treatment.—Injection arsycodile continued.

November 28th.

Patient complains of frequent coughing spells with choking sensation in region of the heart. Temperature: 100 to 101. Pulse: 102. *Distinct systolic murmurs over the heart.* Two bowel movements. Perspires easily. Inunction treatment resumed.

November 29th.

Pulse: 104. Temperature: 100 to 103. Somewhat salivated.

Urine.—Amber; clear; acid; traces albumin; no

sugar; marked traces bile; *excessive* indican. Sedi-
ment: 1% uric acid rhombi; a few leucocytes; mod-
erate cuboidal kidney epithelia.

December 2nd.

Patient complains of dry tongue and lips. Rha-
gades on the lips. *Coughing spells at night.* Con-
tinuous drowsiness. Loss of appetite, and weak-
ness.

December 3rd.

No vomiting: No diarrhoea.

December 7th.

Dryness of lips and tongue lessened since reduc-
ing the arsycodile injections. Appetite better.

December 11th.

Patient complains of dry tongue, pain in region of
heart and left arm.

Urine.—*Excessive* indican.

December 12th.

Patient suffers considerably of spells in the re-
gion of the heart, radiating into the left arm, with
choking sensations at night. *Wassermann test* is
very positive.

December 13th.

Hypodermic with camphor oil improved the coughing spells and the pains around the heart. Vomited egg-nog. Only one bowel movement.

Treatment.—Jodipin, one drachm a day by hypo.

December 14th.

Patient vomited several times, having coughing spells. Since last night very often delirious. Frequent twitchings of the muscles and arms. No diarrhœa.

December 16th.

The quarter grain of morphine hypodermically removes the heart pain, whereupon patient sleeps all night. Mucus in throat towards morning very troublesome.

December 20th.

Exitus.

CHAPTER XII.

LATENT CASES.

CASE 19.

Mrs. C. Z.

28 years of age.

April 2nd, 1909.

Married for two years. No children. Is 5 feet 8 inches tall. Weight, 170. Very healthy appearance. Complains of aching in the left chest with *wheezing on deep breathing for the last 10 days*. No cough. Wishes to know the cause of her not having had any children. Menstruation regular every 4 weeks, painless, lasting 5 days. Bowels move regularly. No palpitation. No stomach complaint. Used to have flushes in her face.

Lungs, liver, heart, spleen.—Normal. Exaggerated sensitiveness to pressure on left 8th intercostal nerve.

Urine (By catheter).—Acid; 1023; marked traces albumin; no sugar; no bile; traces indican. Sediment: Moderate leucocytes; a few squamous epithelia; a few red blood corpuscles; red blood corpuscle-shaped oxalates.

Uterus.—Retropositus.

Treatment.—Mesotan inunction; massage of the uterus; pessary.

April 8th.

Patient admits having had a right salpingitis a year ago, lasting two weeks.

Treatment.—The same; ichthyol tampons in addition.

April 23rd.

Urine (By catheter).—No indican.

April 30th.

Treatment.—Continued.

May 4th.

Iodine injection into uterus.

May 12th.

The same.

May 17th.

The same.

May 27th.

The same.

June 2nd.

Application of iodine tincture to fornix vaginae.

June 5th.

Injection of iodine tincture into uterus.

June 30th.

Right inguinal gland is swollen and painful. Thorough examination of the genital organs, as well as of the legs, shows no cause. The only possible explanation at this time could be found in the slight erosion caused by the lower end of the corset spring pressing on the abdominal skin.

September 2nd.

The right inguinal gland is hard and the size of a pigeon's egg. No explanation for this trouble is found in the uterus, tubes, ovaries or vulva. Patient complains of some pain occasionally across the lower abdomen.

Treatment.—Tincture iodine, externally.

Urine (By catheter).—Pale amber; slightly alkaline; turbid; 1010; no albumin; traces indican.

September 29th.

The gland in the right inguinal region has broken open, discharging a clear serous fluid from a pin-head-sized opening over the center of the gland. *On the left arcus palatoglossus is a lentil-sized, sharply defined, oval ulcer, covered with yellowish detritus.* On close questioning, *patient states that eleven years ago she had a few sores on the labium, a few months later appeared pustules on the tibiæ, the thighs and the side of the thorax, leaving visible lentil-sized round scars.*

The thought of latent syphilis immediately arose in my mind. Close examination of the body showed that *the axillary glands on the right side were hard and enlarged*, the same as the right inguinal gland.

The *Wassermann test* made the next day proved a *very positive* reaction.

She further states that at that time, eleven years ago, she had no sore throat and no headaches, but two years later took some medicine for some blood trouble.

October 4th.

The skin over the right inguinal bubo, beginning to break down; the edges undermined, showing in the depth some thick yellowish detritus.

Treatment.—Inunction treatment is instituted, besides sodium iodide, 30 grains a day.

October 8th.

Patient tells me that *as a girl of 16 years of age* she had *some cauliflower-shaped warts on the genitalia and some sore patches on the tongue*; could not eat any sour things; had a *red-spotted "breaking out" on the body*; afterwards she noticed some *ring-worm-shaped spots on the dorsum manus*.

The infiltration in the right inguinal region getting smaller. The ulcer on the left arcus well nigh healed.

Treatment.—The same.

October 12th.

The right inguinal bubo getting smaller. The bases of the ulcer, tough, white looking.

October 29th.

Bubo showing healing, red granulations.

Treatment.—Inunctions continued.

CASE 20.

Mrs. B.

Mrs. B., wife of the patient whose case we mentioned (Case No. 7), after being greatly relieved by specific treatment, happened to step off a street-car and broke the right femur in its upper third about October, 1908.

It was set, afterward wired, but soon after the cast was taken off, four months later, it broke again. Thereupon the surgeon deemed it wise to have specific treatment instituted again. The *Wassermann test*, suggested by me, *proved positive*.

Two months later the X-ray showed the formation of a firm *callus*. *This latter has been formed, since the specific treatment was instituted, while it was invisible before, as the X-plate taken from the former fracture showed.*

At present the patient is able to fully use her leg.

CASE 21.

Mr. P. H. E.

35 years of age.

Patient has complained of *night sweats* for the last four to six weeks. Some small tablets which he took once a day and which made his throat dry, relieved the night sweats (atropin?). No cough. Does not think he has lost in weight. Appetite not as good as before. He complains of *peculiar spells of lameness in both knees. They feel numb when he flexes or extends them.*

Complains further of *hot flushes to his head.* Bowels move every day. No palpitation. *He thinks "his nerves are sick."* He states that two or three years ago he was in the same condition because he worried a great deal at that time. No headaches with the hot flushes. He, at the same time, complains of *dizziness.*

He states that four years ago he had tuberculosis of the left lung, accompanied for four or five months by a terrible cough and expectoration of yellow sputum, in which tubercle bacilli were found. *After the examination patient admits that two and one-fourth years ago he had a small ulcer on the preputium, with suppuration of the left inguinal glands. The preputium was amputated, and the left inguinal glands, after they had been swollen for a period of one month(!), were extirpated.*

Lately he has *frequently* had a "cold," with sen-

sitiveness of the left submaxillary glands. He drinks considerably, and since he has ceased smoking his asthma has lessened.

Present Status.

The *glands* of the neck on both sides, as well as axillary and cubital, are *enlarged and hardened*. The same is true of the right inguinal glands. In the left inguinal region a cicatrix remains.

Reflexes: Patellar, normal. Pupillary, *slow*. The left tonsil shows *peculiar, circular-shaped, grayish detritus*. No mucous patches on the tongue. A white circular scar opposite the wisdom tooth.

Liver: *Enlarged* moderately, *edge dull*.

Spleen.—Somewhat *enlarged*. Patient had the malaria, so he thought.

Lungs.—The left subclavicular region shows an old, walled-off apicitis. The rest of the lungs normal.

Heart.—Normal.

Urine.—1018; acid; albumin: marked traces; indican: traces; no sugar. Sediment: A few leucocytes; epithelium: a few cuboidal (kidney), a few squamous; moderate octaëders of oxalate of lime, middle-sized.

Wassermann test positive.

Diagnosis.—Latent syphilis.

CASE 22.

Mr. R. B. Widower.

52 years of age.

September 10th, 1907.

Patient complains of being tired after the slightest exertion. Seems fairly well. Appetite very good the last 2 or 3 years, still he does not feel stronger. Two years ago he had continual headaches, lasting 2 or 3 months. Four years ago he had a specific infection (ulcer on the penis). No exanthem. No sores in mouth, pharynx or rectum. Has taken iodide of potassium continually for the last 4 years. Had inunction treatment for 3 months in Hot Springs. He is father of 4 healthy children. Does not cough; shortness of breath more pronounced of late. Has lost 30 pounds in the course of 4 years. Urine is frequently of high color, and causes him burning in the penis; the latter feels on the anterior portion hard, as if something "were grown on the inside." Last winter he suffered from *sudden spells of paralysis of his legs*, whereby he collapsed without warning; *lost his speech for a few hours or became unconscious*. The urine, as well as the feces, were passed involuntarily. He spent all winter in the hospital.

Status.

Patellar reflexes: Both exaggerated. Dermography exaggerated. Pupillar reflexes: Somewhat tardy. Pupils irregular.

Lungs, Liver, Spleen, Kidneys: Normal.

Heart: Over the third left intercostal space some indistinct crepitus. Prostate gland somewhat enlarged.

Urethroscopy.—Nothing abnormal.

The anterior ends of the corpora callosa penis the patient points out to be the "hard growth" he complains of.

Blood.—95% Sahli; 60% polynuclear neutrophile leucocytes; 30% lymphocytes; 4½% *polynuclear eosinophile* leucocytes; 3% large mononuclear leucocytes (Ehrlich); 3½% transition forms (Ehrlich).

Urine (Bottle): Light amber; clear; slightly alkaline; traces albumin; no sugar; traces indican. Sediment: Numerous leucocytes; a few cuboidal epithelia; moderate red blood corpuscles; no casts.

September 12th, 1907.

From all these symptoms, I considered the case "post syphilitic neurasthenia," and put him on hydropathic treatment; gave him a rectum cooler; had him take arsenferratose, three tablespoonfuls a day; bornyval three times a day.

September 24th, 1907.

Patient has not started the treatment as yet, for he thinks that he "is strictured," because some time ago an instrument could not be passed, and he has continually a peculiar sensation at the above-men-

tioned ends of the corpora cavernosa. To convince the patient of his faulty obsession, I passed a sound No. 24 without the slightest difficulty. The rest of the treatment remained the same.

October 15th, 1907.

• Patient has gained one pound in weight, weighs 171 pounds. He thinks that both funiculi spermatici, in the inguinal regions, are swollen towards morning. That peculiar sensation in the front of the penis has not decreased. Appetite is not as good as before. He sleeps well.

November 8th, 1907.

Weight, 176 pounds. The last two or three days he feels "half sick." Has no longer any sensation in the penis.

February 5th, 1908.

Patient complains of a pain along the urethra which has persisted for the last year, and, as he terms it, of "chordee." I applied a cooling sound.

February 15th, 1908.

Patient feels much better.

Treatment.—The same.

February 18th, 1908.

The same treatment.

July 26th, 1909.

Patient complains of purulent discharge the last few days, which shows excessive gonococci. The first as well as the second portion of the urine turbid from pus.

Treatment.—Albargin irrigations.

August 4th, 1909.

Discharge ceased. Tenesmus.

August 17th, 1909.

Condition the same. Both portions of the urine turbid, showing considerable pus shreds.

August 21st, 1909.

First portion of urine turbid, with pus shreds, second portion clear.

October 23rd, 1909.

Patient complains of a painful sensation along the urethra, radiating into the glans. At times he thinks that the constitutional disease, which he acquired six years ago, still persists. The first portion of the urine contained a few mucous shreds, second clear.

Urethral secretion is mucous, contains a few pus corpuscles, a few squamous epithelia. The prostatic secretion consists of spermin globuli exclusively; no pus corpuscles.

I decided to make the *Wassermann test*, which proved *very positive*. After this finding, I decided to subject the patient first to arsycodile injections, which he started on October 27th, using 0.025 every day. On November 5th, I added mercury vasogen inunctions. On November 12th, I prescribed 12% arsacatin, of which I proposed to make a 5 c. c. hypodermic injection twice a week. His urine on that day is acid; no indican; traces albumin.

November 13th, 1909.

First injection arsacatin.

November 15th, 1909.

Patient complains of not having slept the night after the injection. Awakened in the morning with vomiting. Had no bowel movement for the last two days. Complains of pain in the right lumbar region, which he did not have before.

Urine (Passed in Office).—Acid; *moderate albumin*; no indican. Sediment: Numerous *cuboidal and cylindrical epithelia*; numerous *wide hyalin casts, covered with kidney epithelia*; a few *red blood corpuscles*; moderate leucocytes.

November 19th, 1909.

Patient complains again of one of his old attacks of pain in the glans penis; otherwise he feels well.

Urine.—Acid; *moderate albumin*; *excessive indican*. Sediment: Moderate, wide, *hyalin casts cov-*

ered with kidney epithelia; moderate cuboidal epithelia; a few short granular casts.

Treatment.—Hypodermic injection of 3.5 c. c. of 12% arsacetin solution.

Without the Wassermann test, I would not have believed any treatment in this case necessary. When the Wassermann test, however, proved positive, I renewed “specific” treatment, using according to the suggestion of Neisser, arsacetin in connection with inunction treatment.

March 15th, 1910.

Wassermann negative.

CASE 23.

Miss L. School teacher.

21 years of age.

June 5th, 1909.

The mother of the young lady brought her into my office because the school authorities refused to employ her on account of “bad breath.” As a child she had, as the mother relates, a catarrh in the nose, and had been treated for it. She is the only child. “Her mother has had no miscarriages.” “Father and mother well.” Her bowels move every day. Seventeen years ago she had rheumatic fever.

Nose. Mucus lining shows ulcers on both sides, covered with thick scabs; fœtor. Atrophic pharynx.

Lungs: Normal. Larynx, ears: Normal. *Heart*: Apex one finger's breadth outside mammilla in the 4th intercostal space, systolic murmur.

Liver, Spleen, Kidneys: Normal. Patellar reflex: Normal.

Glands of the body: Not enlarged. Virgo.

Urine (Taken by catheter).—1015; acid; marked traces albumin; *excessive indican*. Sediment: A few squamous epithelia; a few leucocytes; some mucin.

Treatment.—Ung. præcip. alb, vaselin ää 10,0 alternating with phenol natrosulforicinium for local application in the nose.

July 15th.

Patient has a bowel movement every day after taking Pluto water.

Urine.— $\frac{8}{28}$: Alkaline; *very excessive indican*. $\frac{7}{6}$: Neutral; *considerable indican*. $\frac{7}{16}$: Acid; *excessive indican*.

Nose.—The lining of the conchæ to a large extent destroyed and covered with ulcers and scabs; fætor.

When I tell the mother that the case is one of hereditary syphilis, "the mother" broke down and confessed that the child had been adopted by her, because her real mother "died with a broken heart on account of the father's drunkenness." *There was a child, before patient was born, who died when 6 years of age.*

Wassermann test proved positive (next day).

Treatment.—Sodium iodide beside local treatment.

August 16th.

Her associates no longer complain of her former ill breath.

Urine.— $\frac{7}{29}$: Acid; *excessive* indigo carmine (Iodine). $\frac{7}{21}$: Acid; no indican. $\frac{8}{8}$: Alkaline; *excessive* indigo carmine (Iodine).

Treatment.—The same.

September 8th.

The ulcers on the left posterior pharynx are covered with dry scabs. Fœtor: No improvement noticeable.

Treatment.—The same.

Urine.— $\frac{9}{9}$: *Indigo carmine* (Jodine) *excessive*; acid; light amber; turbid. $\frac{9}{16}$: Alkaline; *excessive* indigo carmine (Iodine). $\frac{9}{23}$: Alkaline; turbid; *indican excessive*; pale amber. $\frac{9}{30}$: Light amber; turbid; slightly alkaline; *excessive* indican. $\frac{10}{16}$: Acid; *excessive* indican. $\frac{10}{23}$: Alkaline; indigo carmine (Iodine) *excessive*.

This is a case of hereditary syphilis with concurrent autointoxication, as shown by the constant elimination of excessive amounts of indican through the urine.

CASE 24.

Mr. X.

45 years of age.

First call on September 4th, 1908. Patient's weight: 125 pounds. Sedentary habits; even as a boy never exercising much. Sexually very moderate. When twenty years of age his bowels started to be irregular, somewhat constipated. He ate plenty of sweet things, etc., to aid evacuation. Then he began to be nervous. When twenty-five years of age he went through a rest cure; took a trip to Japan. Coming home, he was infected with chancre on the preputium. He immediately took pills, and, after a while, had some white spots on the mucous lining of the cheeks. Previous to that time he had headaches.

Two or three years later he grew very nervous again. Under Dr. S. Weir Mitchell he went through a rest cure with massage and electricity. During that time he took treatment with iodides. He began to lose in weight until he reached 116 pounds. Later he took iodides again. Seven years later, while working considerably, he had a lentil-sized ulcer in the left occipital region and over the left zygomatic bone.

Four years ago he had a lentil-sized spot on the caput of the right fibula, which was of copper color and desquamative. He took mercury pills periodically every year. Since that time he has taken a

few boxes of these pills. He was told that he had to gain in weight. During the summer there occasionally appeared, small, scaly spots on the lower lip, which were hard and infiltrated, and disappeared after a week or so. Altogether he feels greatly improved in comparison with his state of health three years ago.

Last April he noticed scaly spots of a penny-size on the hair border of the forehead, as well as on the dorsal surface of the extremities, on the elbows, and on his sacrum. By rubbing into various parts of his body a 16½% lanolin mercury ointment every night, the spots disappeared. However, he thinks that every once in a while they reappear.

He has been married for ten years. In the second year of their marriage, after a fall, *his wife gave birth to a six-month fetus*. During the *second pregnancy* the husband and wife "had the grippe," and *his wife miscarried in the third month*. During the *third pregnancy* his wife remained in bed for six months. The *baby* was born "one month too late," as the patient claims, and *died after five days*. The husband had whooping-cough at that time, and did not see the new-born baby. Two years ago his wife gave birth to a "healthy" child.

The patient states that he feels quite well for a week at a time, and then, all at once, he becomes unable to work without great irritability and strain. He grows depressed; very nervous; a hazy feeling in his head. Continues drowsy. His stools

very often are foul-smelling, quite frequently light brown, like shredded wheat. Sometimes thick mucus covering them; sometimes liquid; the latter, however, very rarely. If he takes sodium phosphate before breakfast and before luncheon he has a good bowel movement. Generally, however, his stools are "dead," and he has a sensation as though the feces had been "dragged off the lumbar spine."

His appetite is fairly good. No sour stomach. No bad breath. For three years he has been noticing mucus coating his stools. He is not short of breath. Sleeps too much. Complains of cold hands continually. A year and a half ago he was suddenly seized, while walking, with numbness in both calves, as if they would refuse to move. Once he nearly fell on the street, and he grew very nervous whenever he had to board a street car. Even now he frequently has a sensation as if he would not weigh, altogether, more than five pounds.

Status Presens.

Lungs, Heart, Liver and Spleen: Nothing abnormal. Reflexes: Patellar and Pupillary: Normal. A few lentil-sized, copper-red spots along the hair border of the forehead, centrally peeling; one on the left side of the dorsum nasi. The glands of the body are small and hard. A few brown spots on the elbow.

Dermography: Normal.

Leubes Test (Four hours): A few c. c. clear

liquid, neutral. No free hydrochloric acid; no lactic acid; mostly erythrodextrin; very little amylum. Microscopically: Striated muscle fibers with visible nuclei, moderate cocci, and a few thin, short bacteria.

Inflation of Stomach.—This shows the greater curvature one and one-half cm. below umbilicus; lesser curvature seven and one-half cm. above umbilicus. Right Kidney: Lower half palpable.

Prostatic Gland: Normal.

Blood.—100% hæmoglobin; 4,500,000; differential count: 63% polynuclear neutrophile leucocytes; 31% lymphocytes; 4% polynuclear eosinophile leucocytes; 1% large mononuclear leucocytes (Ehrlich); 1% transition forms (Ehrlich).

Urine (Bottle).—Amber; clear; slightly alkaline; 1007; faint traces albumin; no sugar; marked traces bile; traces indican. Sediment: A few leucocytes; a few cuboidal epithelia; a few cylindrical kidney epithelia; a few squamous epithelia.

Feces (Schmidt Test).—Light gray-colored scybala; excessive, *undigested connective tissue strings*; excessive fat acid salts. Blood—positive (Weber and Aloin Test); no amylum.

Treatment.—Abdominal supporter; diet for constipation; acidol pepsin and pancreon; later inunction treatment and iodides.

September 21st.

Weight, 127. Patient has gained two pounds. Feels very drowsy. Thinks the supporter is very good.

October 3rd.

Weight, 131½ pounds. The last two days he did not eat much. Had a cold. Tongue clear. These last two days he had one of his former periods of depression. At that time he always has a feeling of pressure in his temples and in his neck. Bowels move every day. Sleeps very profoundly, "as if poisoned."

October 14th.

Urine (Bottle).—Acid; moderate indican. Sediment: A few squamous epithelia; a few kidney epithelia; nothing else. Weight, 135½ pounds. *States that he has not weighed as much in the last fifteen years.* Feels strong, but complains of continual cloudy headaches in his forehead, and of being entirely exhausted whenever he exerts himself. Every afternoon he could sleep profoundly; sleeps at night profoundly, as in a state of anæsthesia.

Treatment.—33 ¹/₈% mercury vasogen.

October 22nd.

Weight, 139 pounds. Slight gingivitis. *Treatment:* Iodides added.

October 29th.

Weight, 143 pounds. His head feels much lighter. Bowels move every day. Tongue clear.

Treatment.—50% mercury vasogen. The remainder the same.

November 5th.

Weight, 139½ pounds. Patient complains of having experienced a spell this week similar to those he had before: Depression, weakness, lack of appetite; dreams very much, he thinks. The above-mentioned spell came suddenly. He does not eat as much as before. Had diarrhœa once.

Urine (Bottle).—Amber; clear; acid; no albumin; *marked traces bile*; 1012; iodine positive. Sediment: A few squamous epithelia; moderate medium-wide hyalin casts; moderate kidney epithelia; some mucus.

November 12th.

Weight, 142 pounds. Patient complains of drowsiness for the last two or three weeks. Rhinitis and cough. Salivation. Has had four weeks' inunction treatment. Ordered to cease inunction and iodides.

November 16th.

Gingivæ in good condition again. Feels normal "as if the mercury had left him." The tongue somewhat coated.

Treatment.—50% mercury—vasogen, resumed.

November 23rd.

Weight, 144 pounds. Appetite good. Feels well.

Reflexes: Patellar and Pupillary: Normal. Tongue clear.

Treatment.—One week more inunction.

December 2nd.

Weights 144 pounds. *Patient has gained 17 pounds in two months' treatment.*

Urine.—*Excessive indican; marked traces bile.*

Was very nervous to-day, although he feels 75% better than before. He has the *sensation of cobwebs in his forehead* and feels *very drowsy*. Complains of inertia whenever he wishes to do something. He has not the sensation of gas or nausea.

Treatment.—Discontinue the mercury and iodides. Continue, however, acidol pepsin, buttermilk, lactobacillin tablets, and Carlsbad water before breakfast.

January 16th.

Weight, 141 pounds. He did not feel very well. He actually lost three pounds, but ascribes this to having taken less milk. Before, he used to have chilblains during the cold weather and was very sensitive to the cold, from which he is glad to be free this time. Before Christmas he felt somewhat bilious and depressed, but not nearly so bad as before. He noticed again a lentil-sized copper-red spot on the dorsum nasi.

February 17th.

Weights 142½ pounds.

Urine.—February 3rd: Neutral; *faint traces bile*. Traces indigo carmine. February 9th: Acid; traces indican; no bile.

Patient does not think that he has enough “spunk” yet. Does not complain of gas. Bowels move every day. Up to the last ten days, he took iodides. The last fourteen days he notices again a lentil-sized, copper-red spot on his forearm, centrally peeling.

Urine.—February 17th: Very acid; no indican; *marked traces bile*.

Treatment.—Carlsbad water in morning; iodides; acidol pepsin continued.

March 6th.

Weight, 142½ pounds. Feels very well, lately. He shows on his right lower lip, just as before, a somewhat infiltrated, lentil-sized spot. He does not complain so much of that drowsy feeling as before. He does not get so easily excited as before.

Urine.—*Marked traces bile; traces indican.*

April 5th.

Wassermann Test: Negative.

April 12th.

Weight, 141 pounds. Four weeks ago patient had the grippe. Last two or three days his eyelids have stuck together in the morning. He has more scabs in the nose. Some cough. A centrally-peeling spot on the forehead.

Lungs, Heart: Normal. Liver: Sharp edge. Larynx: Somewhat reddened lining.

Urine (Bottle).—1020; acid; marked traces albumin; *traces bile; considerable indican.* Sediment: A few leucocytes; a few cuboidal kidney epithelia; a few squamous epithelia.

Treatment.—Salipyrin.

April 23rd.

9 A.M.—Yesterday, immediately after noon, patient had fever with chills and headache, herpes on

the lips, after a trip in a buggy, during which he became chilled.

Lungs: Right posterior bronchitis. Heart: Normal. Spleen: Not palpable; angina. Temperature: 102. Pulse: 96.

8 P. M.—Feels drowsy, complains of tinnitus after salipyrin. Temperature: 103. Lungs, Heart, Spleen: Nothing abnormal.

Complained this morning, as well as this evening, of *tenderness to pressure on the right lower abdomen.*

April 25th.

Temperature: Normal. Weak. Scleræ: Yellowish. Stools: Somewhat *light*. Urine: *Very dark brown.*

Treatment.—Carlsbad water.

April 26th.

Depressed and weak. No appetite. Bowels moved twelve times.

Urine: Quite red. Sclerae: Yellow.

Treatment.—Carlsbad water; acidol pepsin; stomach drops.

April 27th.

Urine: 1016; neutral reaction; dark brown color; cloudy; moderate albumin; *very excessive bile; considerable indican.* Sediment: A few leucocytes; considerable cuboidal kidney epithelia; con-

siderable cylindrical kidney epithelia; a few short, thin granular casts; *excessive bile pigments*. Otherwise condition unchanged.

April 30th.

Icterus. Urine (Bottle): *Still excessive bile; considerable indican*. Sediment: *Bile pigments*.

May 3rd.

Icterus slowly disappearing. Little appetite.

May 5th.

Condition the same.

May 6th.

Urine.—*Excessive bile; excessive indigo carmine*.

May 10th.

No appetite.

May 12th.

Patient feels better. Has better appetite.

Treatment.—In addition to the above, podophyllin pills and phosphates.

May 13th.

Patient feels better. Has better appetite. Urine becomes lighter. *Feces*: *Massy; dark gray*.

May 15th.

Temperature: Ascending to 101. Coryza, cough.

May 16th.

Temperature: 99. Otherwise the same.

May 17th.

Patient feels better. Normal temperature.

Urine (May 18th): Acid; moderate albumin; *very excessive bile; considerable indican.*

May 24th.

Patient states that the urine passed last night was very much more pale. He feels better. Scleræ still icteric. *Feces*: gray.

Treatment.—Natural Carlsbad water; acidol pepsin.

Urine.—Alkaline; considerable indican; no albumin; *moderate bile.* Sediment: A few squamous epithelia and brick. Nothing else.

June 2nd.

Patient feels better. Icterus.

Urine (May 30th): Acid; traces albumin; *moderate bile; excessive indigo carmine.*

June 14th.

Patient complains of itching and nausea on empty stomach. *The left liver lobe palpable; dull edge; still somewhat icteric.* Tongue clean.

Urine: Dark amber; foam: white; traces indigo carmine; *no bile*; faint traces albumin.

Treatment.—In addition to the former, cold packs and massage.

June 26th.

Weight, 125½ pounds. Patient feels weak. Has not gained much in weight. Took three meals a day only. Had seven massage treatments in ten days. Tongue clean, though appetite not very good. Every once in a while still a gnawing feeling in the epigastrium, disappearing on eating. Bowel movement every day, brown color.

June 29th.

Urine.—Traces indican; no bile; white foam; clear; amber.

July 7th.

Patient has gained three pounds. Tongue clean. Appetite not great. Blepharitis.

Urine.—Acid; *no bile*; moderate indican. Sediment: Moderate kidney epithelia containing bile pigment; a few hyalin casts with bile pigment.

Treatment.—Sodium iodide.

Wassermann test made four weeks after Sodium iodide was discontinued, proved *partially positive*.

In 1910 two more Wassermann tests were made, each time negative; patient feeling very well, weighing 142 lbs.

CASES 25 AND 26.

Mr. F. M.

42 years of age.

April 22nd, 1904.

Married for 2 years. Towards middle of January infected.

Status.

In the sulcus coronarius chancre; maculo-papulous exanthem covering the whole body. All glands hard and indolent. Hair falling out. Right tonsil reddened.

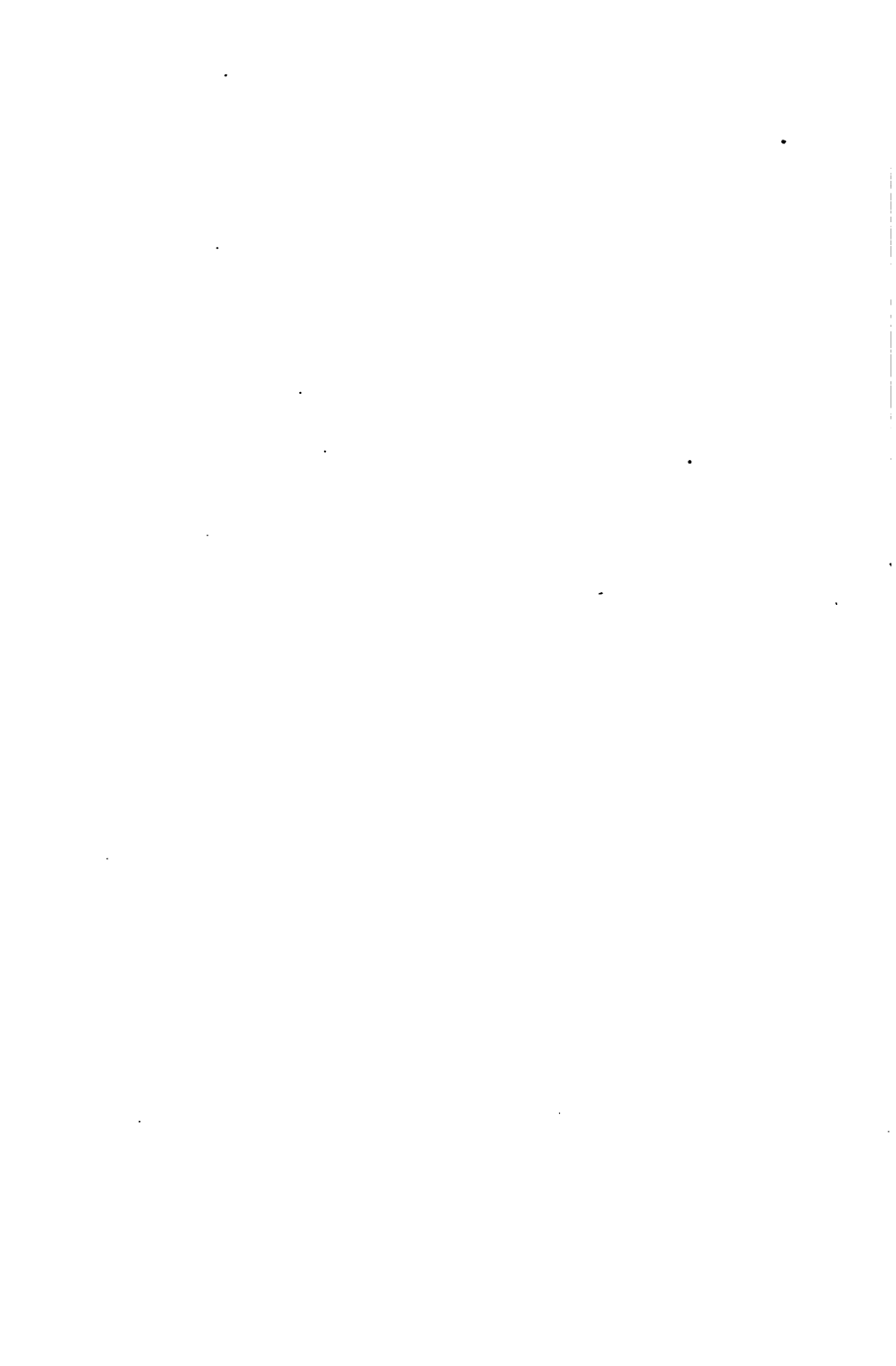
Patient is put on inunction treatment.

His wife shows on the introitus vaginae, hidden behind the right portion of the anulus, a chancre.

In due time, with the appearance of the eruption, she was put on a rigid inunction treatment. She, as well as her husband, has had repeated inunction treatments, carried out very conscientiously. They have gone to Arkansas Hot Springs, undergoing there a vigorous treatment with mercury and iodide; have gone to sulphur baths, etc., etc.

Wassermann test made in October, 1909, proved to be *very positive* in both of them, *four years after incessant treatment*, when there had not been any clinical sign of syphilis in the last year and a half.

PART III.
THERAPY.



To attain a cure of syphilis we must apply specific treatment in a most thorough manner, *mercury* and *iodine*, aiding the treatment by certain physical therapeutic measures—*baths, sweating, mineral waters, etc.* The form of treatment recognized to-day as the only one efficient, as is stated in the introduction, is the Fournier-Neisser *chronic intermittent treatment*, not the symptomatic treatment as used to be practiced before the discovery of the Wassermann test.

I. LOCAL TREATMENT.

It is usually sufficient to cover the primary induration with mercury plaster or with mercury ointment. For the female genital organs the following ointment is especially efficient:

Hydrarg. chlorid. mitis.		
Sod. chlorid.	āā	1.0
Aq. dest.		
Lanolin	āā	5.0
Vaselin	ad	30.0
Ft. ung.		
Sig. For external use.		

In mixed *chancre*, we have to remove first the virus of the *ulcus molle* by cauterization with *phenol*, or in very severe cases by dusting the sore with *iodoform* and afterwards applying a 10% *Peru-Balsam-Vaseline* ointment. After a few days of such treatment the ulcer presents a smooth surface, to which the above-mentioned mercury plaster may be applied. In particularly obstinate cases we should administer at the same time potassium iodide, 1-3,0 g. pro die.

In cases of *hard chancre*, situated underneath a congenitally long *præpuce* or a *præpuce* which has become phimotic through the disease, a circumcision is done first, though the latter in most cases is superfluous, inasmuch as the *phimosis* disappears in a few months under the general treatment and by irrigations with mercury bichloride 1-2000 solution.

Excision of the primary lesion is to be recommended if the latter be situated on an easily accessible place. In cases of *ulcus molle* we recommend Hollænder's hot-air cauterization. In these two latter procedures, the patient must be tested repeatedly with Wassermann test for the purpose of subjecting him immediately to general treatment if the test should prove positive. If, however, we have found the *spirochæta pallida*, we must *immediately* institute general (specific) treatment.

II. GENERAL TREATMENT.

In taking up a case, our first duty is to pay attention to the state of the kidneys, the lungs, and gums (carious teeth must be removed before the institution of the treatment), of the intestines (an existing diarrhoea should first be removed), and of the skin (especially with regard to idiosyncrasy against mercury ointment). In a general way, we may say that mercury is indicated in the *early* stages, while iodide in the *late* stages of the disease. In the former, we find relatively small new formations which disappear by reabsorption without impairing the matrix tissue. In the latter, we find new formations which degenerate in a *gummatous* way, affecting the matrix by necrosis and producing lasting irreparable defects.

We cannot schematically separate the *secondary* from the *tertiary* forms; for quite frequently we see typical gummatous forms in the *first* years of the disease, while, on the other hand, we meet with typical papular forms in the fifth, sixth or eighth year of the disease! The latter lesions, mostly appearing on the palms and soles, yield to iodide very little, even in the late years of syphilis, so that Neisser treats them from the start with mercury and iodide combined.

In the visceral, cerebral, etc., lesions, we must again desist from the schematic treatment mentioned above, because we know that a *gummatous*

lesion may appear in the *early* stage of the disease, and yield excellently to iodides and, on the other hand, we may find—though rarely—*papular forms* in the *later years* of the disease, which yield more quickly and better to mercury treatment. These two facts command the practitioner to desist from discerning both types of syphilis in visceral, cerebral, etc., formations and, considering every possibility, to start immediately with a *combined treatment* of mercury and iodine; for we know very well that the old teaching which identified visceral, cerebral, etc., syphilis with gummatous syphilis is erroneous. We may find papular forms along the cerebral arteries, as we do on the skin. It is erroneous, too, that papular syphilis is always benignant, while the tertiary lesion is ominous.

(a) *Inunction Treatment*.—We must consider this form of treatment an inhalation treatment. Thirty inunctions, in each using 6g. of the $33\frac{1}{3}\%$ gray ointment, bring 60g. of pure mercury into the skin. Out of this amount only about 1% is absorbed, that is, 0.6g. of mercury. It does not seem to make any difference in the effect whether we use $33\frac{1}{3}\%$ or 50% ointment. The smallest daily amount necessary for a robust, healthy individual seems to be 4g. of the $33\frac{1}{3}\%$ ointment, for a woman 3g.

If the tolerance towards mercury in a given case is known to be good, we may use 5 to 6g. a day. Of course, if there are daily baths, sweat baths, etc., used at the same time, one should use much larger

doses of mercury, as a good deal of the mercury applied then is lost to the patient.

In inunction treatment, which, as I stated before, is an inhalation treatment, we must pay special attention to *stomatitis*. The patient must remain in the mercury vapor arising from his skin within a closed room. That means he must remain at least nine hours in bed every night. The ointment must contain the mercury in a very fine division; *mercury vasogen* is commendable. Thirty to thirty-five inunctions form one course. Porous woolen underwear should be worn, and in the diet we must exclude fruit acids, salads, and tobacco. Inunction should take place before retiring, should last for about one-fourth of an hour, and be systematically applied to various parts of the body. The treatment should be pushed to the utmost limit of tolerance.

In cases of swollen gums there is recommended this tincture, to be brushed into the gums:

Tincture Krameria.

Tincture Galla.

Tincture Iodine—āā.

The mouth should be wiped out every day with a 2% aqueous solution of chromic acid and, after that, rinsed with a glass of lukewarm water (the water not to be swallowed).

If there is an exceedingly dry skin, improper conditions of living, carelessness, neglect of the physician's orders, impossible social surroundings, we must resort to the internal treatment.

(b) **Internal Mercury Treatment.**—This, however, should be used but exceptionally, only where there is no other possible way of treating. It is only with small children that internal treatment seems to be the best method. With these children we use:

Hydrarg. iodid. flav.....0,02— 0,1

Sachari lactis 15,0

Divide in partes—No. 10.

S: Take one powder—in three portions—
a day.

To very small children, up to the second month, we give 0,002 a day, slowly increasing the dosage up to 0,003 a day. At four to six months of age and towards the end of the first year, we reach sometimes 0,005. If diarrhœa or colic appear, we must cease this treatment immediately. The bowels must be washed out by enema and by administering large doses of castor oil. After a few hours we may give very small doses of tincture of opium.

(c) **Injection Treatment.**—We distinguish injections: with (1) soluble, (2) insoluble salts.

1.—Ever since G. Lewin recommended the 1% *mercury bichloride solution*, this has remained the one most frequently used. One injects of the following solution 1 c. c. containing 0,01 HgCl_2 , every day and, if borne well, 2 to 3 c. c.:

Hg. bichloride corros..... 1,00

B. Eucaini 0,5

Aqua destillad 100,0

The least irritative is the prescription of the Breslau Clinic:

Hg. cyanat	1,0
Cocain muriat	0,6
Aqua destill	100,0
Use one to two c. c a day.	

The least irritative, though of relatively small effect, is the following:

Enésol	0,06 pro die
(= mercury salicyl-arsenate).	

The place for injection is that part of the skin which is pillowed well by adipose tissue, like the buttocks, or the back of the patient. After the injection has been made, the needle is pulled out quickly, at the same time displacing the skin laterally to prevent the escape of the injected fluid, or, if the patient is in a stooping position, he immediately stands erect. The place of injection is gently rubbed and covered with zinc oxide plaster. The effect of the injection treatment is rapid. One makes, in the course of 5 to 6 weeks, 30 injections in succession, using in all about 0,3 to 0,6 mercury salt.

In from one and one-half to two months there appears a relapse of the disease in more than half the cases, and this occurs several times within the first two years. In spite of this fact, the injection treatment is by far superior to internal medication, or to the inunction treatment, if the latter be not carried out with a special energy.

On account of the rapid effect of the treatment, as well as rapid elimination of the mercury, this form of treatment is mostly indicated in cases in which the treatment may have to be interrupted on short notice (because of nephritis or mercury idiosyncrasy). Absolutely painless mercury injections do not exist, though the pain in these cases lasts but one hour!

Among the *local* symptoms, after such an injection, there may be conspicuous infiltration. This site must not be used in choosing the place for the next injection.

Among the *general* symptoms there should be mentioned diarrhœa, which frequently appears, though the treatment may be continued, as soon as the intestinal irritation has subsided. It generally will be found well borne.

2.—A much more energetic effect than with inunction treatment is obtained by injection of oil emulsions of insoluble mercurial salts, such as calomel, mercury salicylate, mercury thymolacetate. According to Dr. Zieler, very good results may be obtained by using the oleum dericini for the preparation of 40% mercury oil after the following formula:

Hydrargyrum puriss. bidestill. (Merck)	40,0
Lanolin puriss. sterilis.	15,0
Ol. dericini sterilis.	45,0

The grinding of this mixture must be done so thoroughly that the mercury globules present under

the microscope an equal size with a diameter one-fourth to one-tenth of the diameter of red blood corpuscles. That means that the globules should not be over two mikrons in size. Since the manufacturers of the above-mentioned oil have paid attention to this little item, we have not observed any unwelcome infiltrations. The mixture is of syrupy consistency if kept at room temperature, and should be well shaken before used.

This gray oil works slowly, but in the large dosage of 0,14 very energetically. In women, who are, as a rule, far more sensitive to the injection treatment than are men, one should always use the small doses of 0,05 to 0,07 only. We are indebted to E. Lang for the introduction of this method of treatment, and under no circumstances should we use the common hypodermic syringe for the injection, as it does not allow of any exact dosage. The injection should be made *deeply* into the gluteal muscles, where we do not observe infiltrations as often as in other places. One chooses always the deepest layer of the subcutaneous fat. After the needle has been thrust into the tissue, one should detach the syringe to make sure that the point of the needle has not entered a blood vessel. In this way one will easily avoid the much-feared emboli. To prevent the oozing of the gray oil, one should exert deep pressure around the point of injection on withdrawing the syringe. If there forms, after the first two or three injections, a hard infiltration, we should not con-

tinue the treatment with gray oil, owing to the danger of a sudden simultaneous absorption of all mercury deposits made. One should not use the same site more than once for injection. One should avoid nerve branches to prevent neuralgia. The injection of 0,07 in robust individuals may be repeated every 4 to 5 days. After the first 5 or 6 injections we make only one injection a week. The whole course comprises from 10 to 14 injections. One should not increase the dosage toward the end of the course. The urine should be examined carefully during the course of treatment, and special attention paid to mouth cleansing. This form of treatment is *contra-indicated* in the following complications: diseased kidneys, intestines, or liver; intoxications with alcohol, lead or tobacco; cachexia, gout, arteriosclerosis, tuberculosis, pregnancy complicated by kidney lesion.

The *gray-oil* treatment is usually applied in patients who do not show symptoms which require *rapid* removal. In these latter cases, which show grave symptoms of immediate danger, *calomel oil* affords the most efficient treatment. Most splendid success has been obtained in cases in which repeated energetic inunctions or injections with other salts have not given any results. The preparation is borne well, just like the gray-oil, provided the calomel is suspended in very fine distribution. We use 40 to 50% calomel oil after the following formula:

Calomel	4,0
Lanolin anhydr. camphor (5%)....	25%
Ol. dericini camphor (5%).....	75%
Uf. f. 10 c.c.	

Sterilization of this emulsion is superfluous, provided that one uses sterilized instruments. The suspension is of a salve consistency. The dose should not exceed 0,1 calomel; is repeated every four to six days; eight to fourteen injections comprise one course. Occasionally there has followed great pain, several times "grippe mercurielle" (Emery): Two to three days after the injection there may set in weakness, loss of appetite, pains in stomach and back, headache, cough. After three or four days these symptoms, as a rule, disappear.

There is no doubt that the calomel injections applied in this form are easier borne than in the 10% suspension, which marks a considerable progress in the treatment. One makes usually four to six calomel injections, and continues the treatment with gray oil.¹

The more thorough the treatment the longer there will be entire absence of symptoms. For the purpose of *after-treatment* one should use the old "Ricord mixture":

¹ The syringe recommended by the Breslau school is put on the market by Devitte and Herz, Berlin, under the name of "Record Syringe." It is graduated into fifteen parts, each holding one-fortieth c. c., which means that with a 40% suspension each subdivision holds 0,01 calomel. One will, therefore, fill the syringe up to the tenth mark in using gray oil or calomel emulsion of the above prescription.

Hg. biiodat.....	0,1—	0,2
Kal. iodat.		10,0
Aqua destill		ad 300,0

S:—One tablespoonful to be taken three times a day for several weeks.

The main effect of the iodine is seen in tertiary syphilis, though there are certain lesions in the *early* stage of the disease, as we mentioned before, which yield to iodine better than to mercury, such as: (1) *Malignant syphilis*, which frequently may be checked by calomel injections, though some of the cases become worse by calomel injections; in such cases we usually use the 10% iodoform ointment, which soothes the unbearable pain, and internally we administer the above mixture; (2) *Ulcerous primary lesions*, in which mercurial treatment has not proved efficient will yield to the above mixture.

III. TREATMENT OF TERTIARY SYPHILIS.

In a large percentage of the cases the mercurial treatment is the safest remedy; but, wherever we find the tendency towards necrosis, it is much safer to retard the destructive process by first giving the rapidly working iodides, following these up later with mercurial treatment, to prevent relapse.

The average dosage of potassium iodide is about 3,0 gram pro die, which usually is well borne. In case symptoms of iodism should arise, as coryza,

conjunctivitis, headache, epistaxis, etc., these symptoms are best combated by administering *sodium bicarbonate*, one gram, three to five times a day with the iodides, or to give one-half gram of antipyrin three times a day. The *iodine rhinitis* disappears usually spontaneously after three to four days, on account of the patient's getting used to the remedy, and does not reappear with higher dosage. We therefore start treatment with small doses and, in the course of about 10 days, increase to three grams a day. There is hardly a case which would not in time stand the potassium iodide. To relieve the unpleasant taste of the remedy, as well as abating the nausea it causes, we find recommended the following mixture:

Kal. iodati.....	30.0
Ferr. citric. amon.....	4.0
Strychnin nitr.	0.02
Elaeosacch Menth. piper.....	5.0
Aqu. flor. aurant. ad	120.0
One teaspoonful three times a day in water (after meals).	

By using only iodine in cases of tertiary syphilitic lesions, these latter quite often disappear so rapidly that one is astonished at the small quantity of iodine which produces such remarkable effects. This holds true, especially in obstinate, centrally cicatrized, peripherally slowly progressing tubero-serpiginous, partially exulcerated syphilis; further in skin gum-

mata which have broken down; further in perforations of the palate and other necrotic tertiary lesions of skin and mucous linings.

Much greater resistance to treatment is offered by ulcerated gummata or gummata of the brain. In these cases a combined treatment with iodine internally and energetic mercurial treatment externally bring about a rapid improvement!

Neisser recommends hypodermic injections of 5 c. c. of a 12% aqueous solution of arsacetin, twice a week.

In every case of tertiary eruption which has yielded to iodine treatment, there should *follow an energetic mercurial treatment!*

Injection treatment with insoluble salts (calomel) is in secondary syphilis, as well as in tertiary syphilis, the safest and most efficient remedy to attain a cure, and to prevent a relapse!

In cases in which we are desirous of a powerful and lasting effect of the treatment (as in malignant syphilis or brain-nerve lesion, menaced eyesight, or life), we *should prefer the injections with calomel to any other treatment*, even though there be a lack of tolerance for calomel.

The rupia forms of malignant syphilis appearing in the first few months with high fever, headache, and intense prostration, quite frequently do not stand either mercury or iodine. Then we have to resort to quinine-iron therapy, though in some cases, after a careful previous trial with mercury, calomel injections work wonders.

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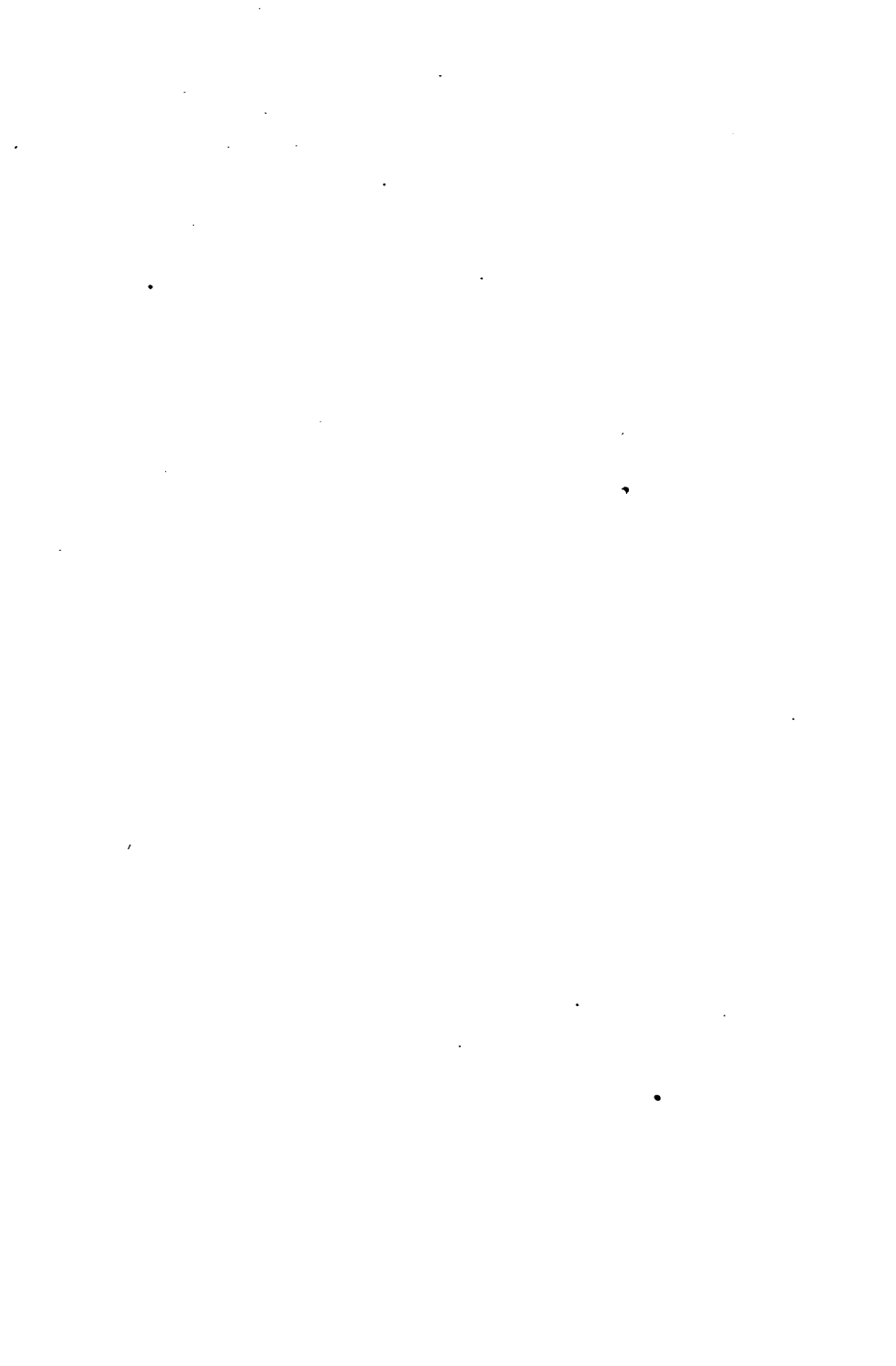
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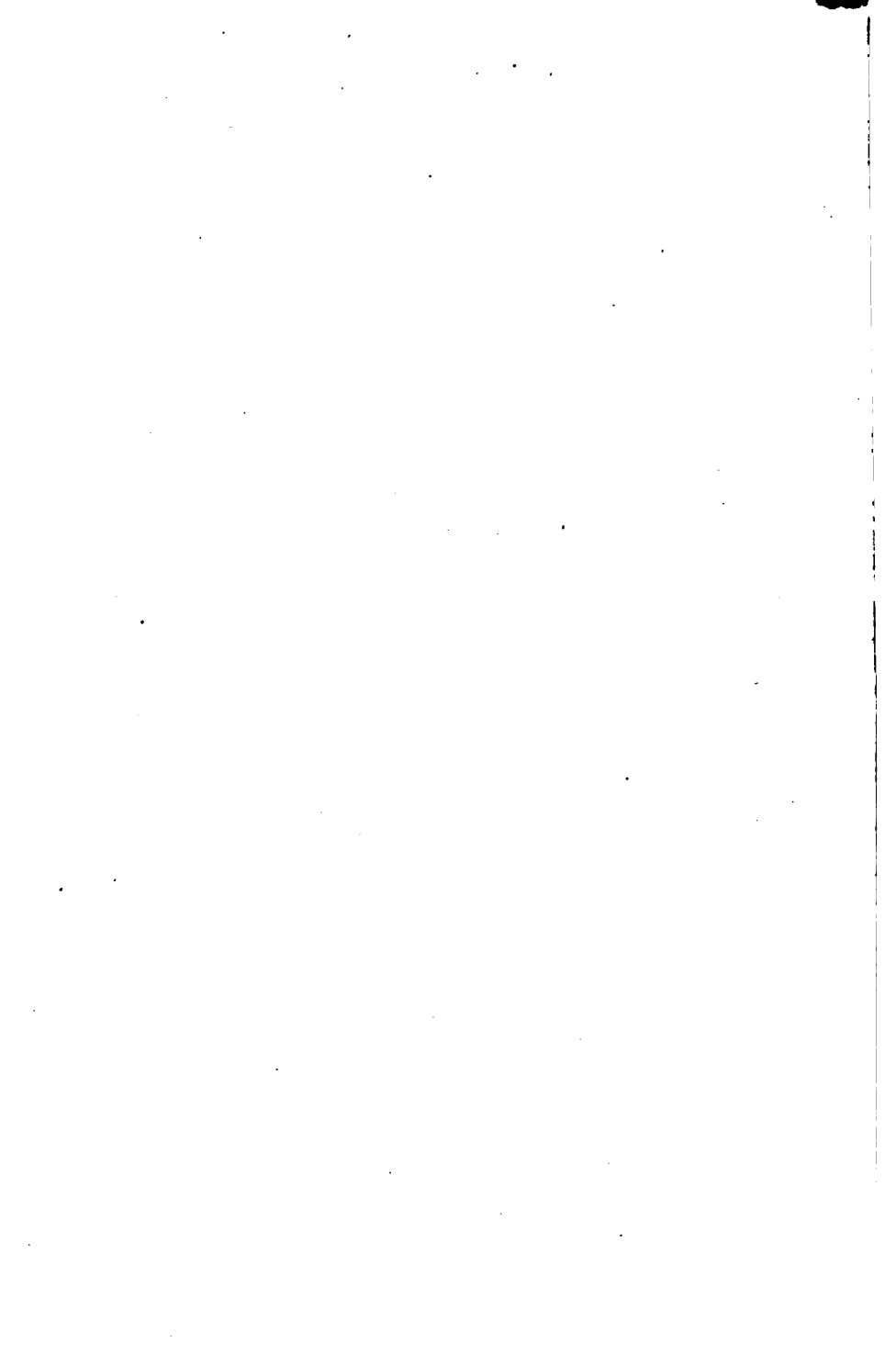
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